DOCUMENT RESUME

ED 287 830 SP 029 476

AUTHOR Kelsey, Craig; Gray, Howard
TITLE Master Plan Process for Parks and Recreation.
INSTITUTION American Alliance for Health, Physical Education, Recreation and Dance, Reston, VA. American Association for Leisure and Recreation.
REPORT NO ISBN-0-88314-298-8
PUB DATE 85
NOTE 86p.
AVAILABLE FROM American Alliance for Health, Physical Education, Recreation and Dance, 1900 Association Drive, Reston, VA 22091 ($9.95).
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Descriptive (141)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Community Development; *Guidelines; *Master Plans; *Parks; *Program Development; *Recreational Programs

ABSTRACT

This document presents guidelines for creating a master plan for community parks and recreation programs. The master plan is a written document used by community decision makers to provide a consistent 5 to 10 year parks and recreation plan. Chapters provide information on: (1) definition and general description of master plans; (2) goals and objectives; (3) supply analysis; (4) population analysis; (5) demand analysis; (6) standards analysis; (7) agency action plans; (8) expenditure analysis; (9) priority-criterion ranking system; and (10) the master plan document. An information management tool, Program Evaluation and Review Techniques for the Master Plan Scheduling (PERT), created for the administrator with start-up phase problems, is also presented. Worksheets for supply analysis and identification of goals and objectives are appended. (CB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

BEST COPY AVAILABLE

Master Plan Process for Parks and Recreation

ED287830

SP 027 476

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

G. Anderson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Sponsored by
American Association for
Leisure and Recreation

an association of

American Alliance for
Health, Physical Education
Recreation and Dance

Master Plan Process for Parks and Recreation

Craig Kelsey
Utah State University

Howard Gray
Brigham Young University

Copyright © 1985 by
American Alliance for
Health, Physical Education
Recreation and Dance
1900 Association Drive
Reston, Virginia 22091
ISBN 0-88314-298-8

Purposes of the American Alliance For Health, Physical Education, Recreation and Dance

The American Alliance is an educational organization, structured for the purposes of supporting, encouraging, and providing assistance to member groups and their personnel throughout the nation as they seek to initiate, develop, and conduct programs in health, leisure, and movement-related activities for the enrichment of human life.

Alliance objectives include:

1. Professional growth and development—to support, encourage, and provide guidance in the development and conduct of programs in health, leisure, and movement-related activities which are based on the needs, interests, and inherent capacities of the individual in today's society.
2. Communication—to facilitate public and professional understanding and appreciation of the importance and value of health, leisure, and movement-related activities as they contribute toward human well-being.
3. Research—to encourage and facilitate research which will enrich the depth and scope of health, leisure, and movement-related activities; and to disseminate the findings to the profession and other interested and concerned publics.
4. Standards and guidelines—to further the continuous development and evaluation of standards within the profession for personnel and programs in health, leisure, and movement-related activities.
5. Public affairs—to coordinate and administer a planned program of professional, public, and governmental relations that will improve education in areas of health, leisure, and movement-related activities.
6. To conduct such other activities as shall be approved by the Board of Governors and the alliance Assembly, provided that the Alliance shall not engage in any activity which would be inconsistent with the status of an educational and charitable organization as defined in Section 501(c)(3) of the Internal Revenue Code of 1954 or any successor provision thereto, and none of the said purposes shall at any time be deemed or construed to be purposes other than the public benefit purposes and objectives consistent with such educational and charitable status. *Bylaws, Article III*

Contents

SECTION I

Chapter		Page
1	**Introduction**	1
	What is a Master Plan?	1
	Purposes of the Master Plan	2
	Who Prepares the Master Plan?	3
	How Long Does the Master Plan Process Take?	3
	How Much Does a Master Plan Cost?	4
	Who Uses the Master Plan?	5
	What is Contained in a Master Plan?	5
	Summary	6
2	**Goals and Objectives**	9
	What are Typical Parks and Recreation Agency Goals and Objectives	9
	Parks and Recreation Master Plan Goals and Objectives	10
	Summary	13
3	**Supply Analysis**	15
	What is a Supply Analysis?	15
	Purposes of the Supply Analysis	16
	Performing a Supply Analysis	17
	Writing the Supply Analysis Section of the Master Plan	22
4	**Population Analysis**	23
	What is a Population Analysis?	23
	Purposes of the Population Analysis	24
	How is a Population Analysis Performed?	24
	Outline of a Population Analysis	31
	Summary	31
5	**Demand Analysis**	33
	What is a Demand Analysis?	33
	Purposes of a Demand Analysis	33
	How is a Demand Analysis Performed?	34
	Summary	42
6	**Standards Analysis**	43
	What is a Standards Analysis?	43
	Purposes of the Standards Analysis	43
	Explanation of Standards	44
	How to Prepare a Standards Analysis	44
	Summary	46
7	**Agency Action Plan**	47
	What is an Agency Action Plan?	47
	Purposes of an Agency Action Plan	48
	Preparing the Agency Action Plan	49
	Summary	51

8	**Expenditure Analysis**	53
	What is an Expenditure Analysis?	53
	Purposes of the Expenditure Analysis	54
	Preparing an Expenditure Analysis	54
	Summary	59
9	**Priority-Criterion Ranking System**	61
	What is the Criterion Ranking System?	61
	Purposes of the Criterion Ranking System	62
	Performing a Priority-Criterion Ranking System	62
	The Point System	62
	The Logic System	64
	The Ranking Chart	65
	Summary	65
10	**The Master Plan Document**	67
	The Cover	67
	The Binding	67
	The Copy	68
	Charts, Diagrams, Figures	68
	The Appendix	69
	Duplication	69
	Increasing the Use of the Master Plan	69
	Summary	69
SECTION II	**PERT Master Plan Schedule**	73
	What is PERT?	73
	What are PERT Elements?	74
	Estimating Performance Time with PERT	75
	An Example of a PERT Time Performance Estimate	75
	Interpreting a PERT Network/Schedule	76
	Finding the PERT Critical Path	77
	Backdating or Scheduling PERT Backwards	77
	Problems with Conventional Methods of Plan Scheduling	78
APPENDIX	Supply Analysis Worksheet	80
	Goals and Objectives Worksheet	83

Tables and Figures

SECTION I

Tables	Page
1a. Parks and Recreation Administrator Performing Master Plan Research	4
1b. Contracting with Outside Consultation Firm to Perform Master Plan Research	4
2. A Comparison of Agency and Master Plan Goals and Objectives	11
3. Inventory of Outdoor Recreation Facilities in Utah, 1970	21
4. Utah's Total Personal Income Receipts, 1958–1971	26
5. Population Gender by City	26
6. Educational Attainment—Persons 25 Years and Older	27
7. Population of the United States, Distribution by Section and Region, 1930–2000	29
8. Projected Future County Populations, 1985–2000	31
9. Sample Size for Several Degrees of Precision	37
10. Selecting a Representative Sample	40
11. Results of a Community Needs Survey	40
12. Comparison of the Community Survey and the Public Hearing	41
13. Population Distribution in Relation to Geographic Region	45
14. Comparison of Agency Facilities with National Parks and Recreation Standards	46
15. Comparison of Nonagency-sponsored Facilities with National Parks and Recreation Standards	46
16. Standards Comparison of Parks and Recreation Resources	46
17. Parks and Recreation Resources in Hillsdale Subdivision	49
18. Agency Action Form—by Agency	50
19. Agency Action Form—by Actions	51
20. Agency Action Form—by Sector	51
21. Cost of an 18-Hole Golf Course for the City of _____	54
22. 1984–85 Parks and Recreation Department Budget Summary	55
23. Criteria for Assigning Utah Outdoor Recreation Roles and Responsibilities	56
24. Cost Per Resident for Community Services	57
25. Comparison of Expenditures and Development in Similar Communities	57
26. Timeline for Agency Action Plan Recommendations	58
27. Comparison of the Point and Logic Ranking Systems	62
28. Application of Points to Criteria Factors	63
29. Master Plan Key Factors	64
30. Key Factors Data from Master Plan	64
31. Priority of Need	65
32. Ranking Chart	65

Figures

1. Master Plan Process Flow Chart	7
2. Supply Analysis Boundaries	18

3. Planning Districts 18
4. U.S. Census Tract Map 19
5. Parks and Recreation Resources Available in a Specific Quadrant 20
6. State Population Breakdown 25
7. Minority Group Population by Planning District 28
8. Population of Planning Districts 30

SECTION II

Table

1. Time Performance in the PERT Network 76

Figures

1. A PERT Network 74
2. Interrelationship between Events and Activities 76

SECTION I

1

Introduction

A fundamental skill of a professional parks and recreation administrator is the ability to prepare a community parks and recreation master plan. However, many parks and recreation professionals have not received specific instruction in the development of a master plan, and they may not have been required to learn this skill while functioning professionals. With the tide of budget justification and program evaluation the master plan concept emerges as a mandatory and many times profound administrator skill.

WHAT IS A MASTER PLAN?

A community parks and recreation master plan is a document that provides an inclusive framework for orderly and consistent planning; acquisition; development; and administration of the parks and recreation resources, programs, and facilities of the agency that sponsors the master plan. To understand this definition more clearly the following breakdown of the definition is provided.

1. **Document.** The master plan is prepared in such a way that a bound copy of the master plan may be distributed to decision-making authorities. The document is divided into key chapters or sections with charts, diagrams, and appendix materials to help the reader understand the content of the document. The document is usually artistically prepared with photographs and graphic design features that make the document easier to read.
2. **Inclusive framework.** The master plan consists of very specific information that serves as the frame or backbone of the community parks and recreation movement. These key areas of specific information are developed in detail throughout this manual and serve as the framework of the master plan document.
3. **Order and consistency.** One of the major advantages of a community parks and recreation master plan is that order is brought to the decisions that are made concerning the future parks and recreation activities of the community. As changes in community leadership occur (mayor, county commission, governor), the master plan maintains consistency in the establishment of priorities and directions. Individual community leader bias can be avoided because the master plan facts determine the orderly and consistent future planning of the parks and recreation resources.

4. **Planning, acquisition, development, and administration.** The master plan serves as the community statement concerning the planning of parks and recreation facilities, programs, and resources. The master plan also establishes statements and directions about what and how much, if any acquisition or development should occur in the parks and recreation area. This document, therefore, allows for easier administration of the parks and recreation program particularly regarding long-range needs or desires.
5. **Parks and recreation resources, programs, and facilities.** This document concerns itself only with the parks and recreation aspect of the community and should not and cannot serve as the planning document for other areas of the community. However, all parks and recreation resources, programs, and facilities are researched, analyzed, and prioritized in relationship to each other. If the city parks and recreation agency is sponsoring the master plan, not only must it consider the parks and recreation programs but it must also analyze other contributors to the citizens' parks and recreation such as the county, state and federal government, voluntary and private enterprise, university groups, and others.
6. **Sponsoring agency.** Generally, a master plan is prepared by one agency, but the master plan process will involve other agencies and groups in the final document. However, the master plan should be prepared with the sponsoring agency's perspective clearly dominant.

PURPOSES OF THE MASTER PLAN

Aside from the obvious purposes or benefits of the community master plan that have been identified in the definition, the master plan provides some very specific purposes that are identified below.

1. The master plan provides detailed researched facts concerning the community and the role of parks and recreation.
2. The master plan establishes priorities and statements of direction based on researched and documented facts, not on opinion, bias, or hearsay.
3. The master plan provides direction for the community for a five- to ten-year period and can also determine immediate as well as long-range goals.
4. The master plan serves as a decision-making document that allows other parks and recreation decisions, problems, and questions to be determined in relationship to the master plan.
5. The master plan can be utilized by all community decision makers, not just the parks and recreation authority.
6. The master plan allows for a consistency in planning that can survive changes in governmental leadership.

The primary purpose of a community parks and recreation master plan is to allow all community leaders to make decisions regarding parks and

recreation (both immediate and long range) based on researched facts and not personal bias or misinformation. The master plan can provide statements of direction that may transcend changes in community leadership but not alter the direction of the community's parks and recreation future.

WHO PREPARES THE MASTER PLAN?

The community parks and recreation administrator should be the primary author of the community parks and recreation master plan. The administrator is in a position to gather data and should have an awareness of community information regarding parks and recreation greater than anyone else in the community. However, many times private consultation firms are hired to prepare the master plan. Occasionally those consultation firms may not provide the indepth information that the community leaders desire, and the cost of an outside firm is high. There are advantages and disadvantages to contracting with firms rather than having the master plan prepared by inside individuals. Tables 1a and 1b depict some of these advantages and disadvantages.

Due to peculiarities of local communities, the parks and recreation administrator as well as governing authorities would best be able to determine who should prepare the community parks and recreation master plan.

HOW LONG DOES THE MASTER PLAN PROCESS TAKE?

The length of time to complete a community master plan is determined by a number of factors, including:

1. **Geographic size of community.** Usually the smaller the community the less time required to prepare the master plan.
2. **Population size of the community.** Usually the lower the community population base the less time required to prepare the master plan.
3. **Monies available for master plan development.** Generally, the greater the amount of money available the less time is required to prepare the master plan. Additionally, if the money is allocated in one year as opposed to over a number of years, the time requirement for completion is less.
4. **Master plan skill.** If the primary author is experienced at master plan development, the time required to complete the master plan will be reduced.
5. **Community support.** The master plan will take less time to complete if local government leaders support the concept and make available information and money.
6. **Primary author's time frame.** If the primary author must sandwich this assignment between other duties, the time frame will be more lengthy.

A general statement may be made regarding master plan development in relationship to time required for completion. A master plan will probably

Table 1a. Parks and Recreation Administrator Performing Master Plan Research

Advantages	Disadvantages
1. Already established community contacts.	1. May not be trained in master plan development.
2. More sensitive to community.	2. May not be able to provide the needed objectivity.
3. Has an invested interest in the master plan.	3. May not have the time to perform the master plan.
4. Is professionally trained in parks and recreation.	4. Master plan may appear to be self-serving.
5. Will make greater use of master plan.	5. May precede on a hot and cold basis.
6. Lower cost to overall master plan process.	

Table 1b. Contracting With Outside Consultation Firm to Perform Master Plan Research

Advantages	Disadvantages
1. May have past master plan experience.	1. Does not have a vested interest in community.
2. Is an outside reviewer which may provide greater credibility.	2. Is not sensitive to local community desires.
3. May have sophisticated equipment (computers).	3. May not understand sensitive interests of community leaders.
4. Task will be completed by contracted deadline.	4. Cost is high.
5. Finished product may look very professional.	5. Flexibility is not always possible.

require at least six months of part-time work for an experienced master plan developer and generally will take 2–4 months for a full-time experienced master plan developer.

HOW MUCH DOES A MASTER PLAN COST?

A number of factors will alter the cost of a community master plan.

1. Geographic size of community
2. Population size of community
3. Use of outside consultants
4. Accuracy of master plan desired
5. Depth of master plan desired

However, a general cost equation can be applied to the cost of a master plan. Generally, a master plan may be developed that is accurate in detail and provides the type of depth that most communities desire by following this cost equation.

$$\$.08 \times \text{Number of Residents} = \text{Total Cost of Master Plan}$$

For a city with 26,844 current residents you could expect the master plan to cost $2,150.00. When one considers the profound impact that a community master plan plays in the 5–10 year life of the community residents, the cost appears to be very appropriate. Costs for a master plan can be reduced dramatically by the use of existing governmental agencies such as universities, census, commerce, forest, and park agencies. Utilizing these agencies usually requires a knowledge of what they can provide and a strong working relationship.

WHO USES THE MASTER PLAN?

The master plan is primarily prepared for use by the parks and recreation agency and by the community decision-makers. However, its use can be directed to every resident in the community since the primary purpose of the master plan is to provide long-range planning priorities for the parks and recreation movement. Ideally, the following individuals and groups would use the master plan:

1. **Parks and recreation department.** To determine the very specific direction that planning, acquisition, development, and administration should take.
2. **Community leaders.** To determine budget priorities, land acquisition, and community leader attitudes regarding parks and recreation development (mayors, county commission, etc.)
3. **Community decision makers.** To determine growth aspects of other agencies such as flood plains, road systems, residential housing units, and commercial sites.
4. **Community groups.** To determine donations for future growth or voluntary and business development in relationship to parks and recreation.
5. **Lay citizen.** To determine the direction of growth of the community's parks and recreation so that the citizen is informed and involved.
6. **Other groups.** To use for promotion of the community (commerce), to determine growth of school playgrounds (schools), etc.

WHAT IS CONTAINED IN A MASTER PLAN?

The community parks and recreation master plan consists of eight very specific sections, each one of which contributes in a direct way to a complete

and comprehensive master plan. A typical parks and recreation master plan would consist of the following:

I. Goals and objectives
- A. Of the sponsoring agency
- B. Of parks and recreation
- C. Of the master plan

II. Supply analysis
- A. Of sponsoring agency
- B. Of all other agencies

III. Population analysis
- A. Population growth, distribution, projection of community
- B. Age, minority, income, education, gender, distribution

IV. Demand analysis
- A. Random citizen demand for parks and recreation
- B. Nonrandom citizen demand for parks and recreation
- C. Program statistics of demand

V. Standards analysis
- A. Standards for sponsoring agency
- B. Standards for all parks and recreation related agencies

VI. Agency action plan
- A. Statement of specific agency action
- B. Statement of time frame of agency action

VII. Expenditure analysis
- A. History of current parks and recreation expenditures
- B. Agency expenditure comparisons to other agencies
- C. Estimated costs of master plan recommendations

VIII. Priority criterion ranking system
- A. Actions of highest priority
- B. Ranking of all recommended actions

Figure 1 depicts the master plan process in diagram form.

SUMMARY

The community parks and recreation master plan process is fundamental to the professional provision of parks and recreation. The master plan is a written document that is used by community decision-makers to provide an orderly and consistent 5–10 year parks and recreation plan. The purpose of the master plan is to have a community guide and direction regarding parks and recreation that is based on gathered facts rather than random and unfounded opinion. The master plan is generally prepared by a highly skilled parks and recreation administrator over a 2–6 month period at a cost of $.08

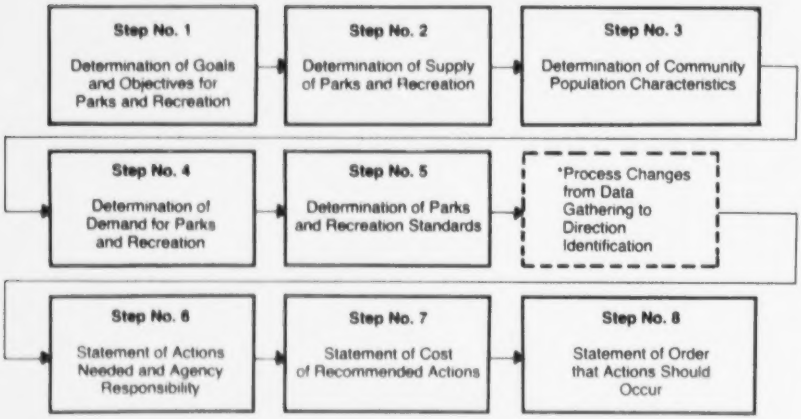
Step No. 1
Determination of Goals and Objectives for Parks and Recreation
Step No. 2
Determination of Supply of Parks and Recreation
Step No. 3
Determination of Community Population Characteristics
Step No. 4
Determination of Demand for Parks and Recreation
Step No. 5
Determination of Parks and Recreation Standards
*Process Changes from Data Gathering to Direction Identification
Step No. 6
Statement of Actions Needed and Agency Responsibility
Step No. 7
Statement of Cost of Recommended Actions
Step No. 8
Statement of Order that Actions Should Occur

Fig. 1. Master Plan Process Flow Chart

per resident. The master plan can be used by any one of a number of interested and concerned individuals and groups to assist in the future of the community parks and recreation movement.

2

Goals and Objectives

The first section of a community parks and recreation master plan will be the establishment of goals and objectives of the sponsoring agency. The depth and breadth of the master plan will be contingent upon the scope of the parks and recreation agency's goals. For example, if the parks and recreation agency established the following as one of their goals:

> to be the primary developer and provider of open space and parkland for community residents

then the master plan would establish goals and objectives that would allow the research to encompass all open space and parkland considerations. However, if the parks and recreation agency limited their goals and objectives to a smaller scale, for instance:

> to provide for city residents sufficient open space and parkland for uncongested leisure participation

then the master plan would establish goals that would limit its research to just what was appropriate for those city residents.

WHAT ARE TYPICAL PARKS AND RECREATION AGENCY GOALS AND OBJECTIVES?

The answer to this question is as diverse as the variety of parks and recreation agencies that exist. However, described below are a variety of typical goals and objectives that have been established for a variety of parks and recreation agencies.

Resource Goals

1. To effectively manage the community's natural resources, to provide appropriate park and recreation opportunities by development actions, according to the appropriateness of the resource and the character of the activity.
2. To insure that parks and recreation programs and resources are compatible with land-use policy and practice within the community.

3. To be responsible for managing all remaining species of wildlife at appropriate population levels within the parks and recreation site.
4. To upgrade the community's entire parks and recreation environment.
5. To protect, preserve, use, or develop the community's outstanding scenic attractions according to their capacity.
6. To develop and protect the community's natural and historic areas and sites.
7. To increase and enhance parks and recreation opportunities by providing maximum multiuse of parks and recreation resources.

Participant Goals

1. To ensure high health and safety standards at all parks and recreation sites within the community.
2. To provide opportunity for full parks and recreation participation opportunities without regard to age, race, religion, gender, or economic circumstances.
3. To provide new and traditional parks and recreation experiences for present and future community residents.
4. To develop and improve parks and recreation programs for the handicapped and disadvantaged.
5. To reduce the cost of providing parks and recreation facilities and resources.

PARKS AND RECREATION MASTER PLAN GOALS AND OBJECTIVES

The depth and breadth of the master plan will depend to a large extent on the goals and objectives of the parks and recreation agency. The purpose of goals and objectives are to assist the parks and recreation professional in planning the day to day activities as well as future planning.

Once the agency has established its goals and objectives, the master plan goals and objectives can be appropriately determined. To illustrate, Table 2 depicts an agency goal and then a corresponding master plan goal.

Once the master plan goals and objectives are determined, specifically structured research can be conducted to meet them. Based on those findings, recommendations can be presented that direct the future planning of parks and recreation.

Specific Master Plan Goals and Objectives

Depending on the community, a number of specific master plan goals and objectives can be suggested. These goals and objectives will help answer the most common questions that arise in parks and recreation future planning.

Community Concerns	Master Plan Goals and Objectives
1. What is currently available to the citizens of our community as far as parks and recreation resources, facilities, and programs are concerned?	1. To identify the existing and potential parks and recreation resources, facilities, and programs provided to the citizenship of this community. a. The completion of a supply analysis of the parks and recreation resources provided by the community agency. b. The completion of a supply analysis of the parks and recreation resources provided by other agencies and groups, specifically county, state, and federal governments, private enterprises, school districts, and voluntary groups.
2. What effect will changes in the community's population have on the appropriate provision of parks and recreation resources and programs?	2. To determine the population characteristics of the citizenry of the community. a. The completion of a demographic analysis concentrating on the factors of age, income, gender, education, and ethnicity. b. The completion of a population analysis concentrating on the

Table 2. A Comparison of Agency and Master Plan Goals and Objectives

Parks and Recreation Agency Goals and Objectives	Parks and Recreation Master Plan Goals and Objectives
1. To provide appropriate open space and parkland opportunities for city residents.	1. To determine appropriate open space and parkland acreage needed for city population.
a. within reasonable traveling distance of resident.	a. to determine appropriate traveling distance for residents to parkland.
b. with a reasonable amount of noncongestion.	b. to determine appropriate participant/space ratio.
c. with appropriate parkland equipment available.	c. to determine appropriate amount of equipment needed for participant/space ratio.

	factors of growth, distribution, and projection.
3. What current and future parks and recreation programs, facilities, and resources do the citizens of the community desire?	3. To delineate and analyze current and future demands of the parks and recreation resources. a. The completion of an activity analysis specifying the factors of participation and duration of each occasion of participation. b. The completion of a community needs assessment to determine random citizen input. c. The holding of at least one public hearing to assess citizen input.
4. How do the existing parks and recreation facilities, programs, and resources of this community compare to other communities of similar characteristics?	4. To compare parks and recreation resources to the nationally accepted parks and recreation standards. a. The completion of a parks and recreation standards analysis which includes population and distance. b. The completion of a parks and recreation standards analysis for nonagency provided resources.
5. What should our community do to adjust to the differences in supply-demand, and in supply-standards?	5. To provide an agency action plan based on the previous findings so that a positive parks and recreation direction can emerge. a. The completion of an agency action plan identifying agency responsibility and a suggested timeline.
6. How much would all of these adjustments cost and where would the community obtain the monies?	6. To provide an expenditure analysis presenting a financial cost estimate for actions suggested. a. The completion of an expenditure analysis.

b. The completion of a method-of-funding chart.

7. In what order should action be taken—in other words, what is the most important adjustment that should take place first, second, third, etc.?

7. To provide a priority-criterion system recommending a specific order that the action plan should take.

a. The completion of a priority-criterion point system.

b. The completion of a priority ranking chart.

What Do I Do Now?

To assist in the development of the goals and objectives of the community master plan, worksheets and examples are provided in the appendix to aid the parks and recreation professional. By inserting your community's information into the worksheet, the master plan process should be greatly facilitated.

SUMMARY

A community parks and recreation master plan must be based on the goals and objectives of the community which is sponsoring the master plan. The purpose of goals and objectives are to:

1. provide direction for future planning
2. answer critical community questions
3. provide structure to the master plan process.

The master plan goals and objectives can be developed to meet the specific goals and objectives of the community and to answer the most common questions in future planning.

3

Supply Analysis

After the master plan writer has developed and linked the community parks and recreation goals and objectives to the master plan, the first research action which takes place is to perform a supply analysis. This process is absolutely essential and must occur at the onset of the master plan as will be evident as the process develops.

WHAT IS A SUPPLY ANALYSIS?

A supply analysis is the process of identifying the existing and potential parks and recreation resources, facilities, and programs that are available to community residents. The supply analysis includes all parks and recreation resources supplied by the master plan sponsoring agency as well as all parks and recreation resources supplied by other organizations or agencies that have an impact upon the community.

A number of key points need to be developed in order to understand this definition completely.

1. **Identifying.** The supply analysis process is first a process of systematically identifying parks and recreation resources. This identification process follows an organized format that is developed in detail in this chapter.
2. **Existing and potential.** All parks and recreation resources are identified, not only the obvious existing resources such as parks and playgrounds, but also those sites that have been earmarked for future development and even potential sites that may be identified as potential usage areas.
3. **Parks and recreation resources, facilities, and programs.** The supply analysis should concern itself with only parks and recreation issues and not deviate to other areas of community concern such as water, transportation, or sewage. Additionally, the supply analysis must consider all resources (land and water areas), facilities (buildings and structures), and programs (tournaments, clinics, open times at facilities and resources, special events, and clubs).
4. **Supplied by sponsoring agency.** As the primary supplier of parks and recreation services (if that in fact is an agency goal) then all resources, facilities, and programs supplied by that agency must be identified.
5. **Other agency sponsorship.** It is also necessary that the supply analysis incorporate those resources, facilities, and programs supplied by other agencies. It would be inaccurate to perform a supply analysis and con-

clude that the city-supplied parks are all of the open spaces provided to city residents, when the city school district also supplies playgrounds and parklands. Agencies that usually supply parks and recreation resources, facilities, and programs include:

- city government
- county government
- state government
- federal government
- private enterprises
- school districts
- religious organizations
- volunteer organizations
- universities or colleges

6. **Impact on community residents.** The supply analysis must include any agency that provides either for cost or for free, as their primary role or as an ancillary role on a permanent or temporary basis, any parks and recreation opportunities.

PURPOSES OF THE SUPPLY ANALYSIS

The supply analysis has several purposes that are important to the master plan process. Identified below are some of those purposes.

1. To identify all parks and recreation services that are provided community residents.
2. To identify what different agencies or groups provide parks and recreation services to community residents.
3. To identify what percentage of parks and recreation services are provided by the respective agencies or organizations.
4. To answer a number of specific and important questions that an effective parks and recreation administrator should know. For example, the following questions would be answered by a supply analysis.

   a. How many parks are available to community residents (regardless of sponsorship)?
   b. How many basketball courts are available to community residents (regardless of sponsorship)?
   c. What impact does the U.S. Park Service (as an example of a federal agency) have on our agency's provision of open space areas?
   d. Are there any archery ranges available in the community?

The list of questions seems nearly endless. By performing a supply analysis the master plan developer has identified the most comprehensive listing of parks and recreation resources available to community residents and hence becomes the major information source regarding parks and recreation.

5. The supply analysis provides information regarding the condition of parks and recreation resources, facilities, and programs. (For example, is the playground equipment at each park in excellent, good, or poor condition?)
6. The supply analysis is utilized for important comparison purposes. Once the supply analysis is completed an administrator can compare demand or usage to the supply (is our agency overloaded?) or a comparison can be made to parks and recreation standards? (Is 16 parks the appropriate number needed in our community?)

PERFORMING A SUPPLY ANALYSIS

To perform a supply analysis a number of specific steps should be followed. Identified below are the supply analysis steps with accompanying examples.

Step 1. The master plan writer should identify the boundaries of the supply analysis area. If the sponsoring agency is the city parks and recreation agency then the supply analysis area would most likely be the city limits. However, if the supply analysis is sponsored by a county or state entity, then the supply analysis boundaries would be county- or statewide respectively. (See Figure 2.)

Step 2. The master plan writer should break the supply analysis area down into planning districts or zone areas. (See Figure 3.) The purpose of this breakdown process is twofold.

a. The planning districts make tabulation of data easier and the application of data becomes more centrally usable.
b. The planning districts make comparison of supply analysis data more meaningful to other sections of the master plan document.

If the supply analysis boundary area is extremely large, such as statewide, then county boundaries or some specialized planning divisions could be utilized.

If the supply analysis boundary area is smaller, such as citywide, then the U.S. Census Tract Document could be utilized. This census tract document is available from the federal government and is updated every ten years. (See Figure 4.)

Step 3. The master plan writer should assign a number, letter, or name to each planning district and determine the resident population of that quadrant or planning district and the size of the quadrants in square miles, acres, or distance from midpoint of the quadrant to the boundaries.

Quadrant 9901-1 Population 4,382 Distance 6.5 sq. miles

Park/Recreation Area _____ Sponsor _____

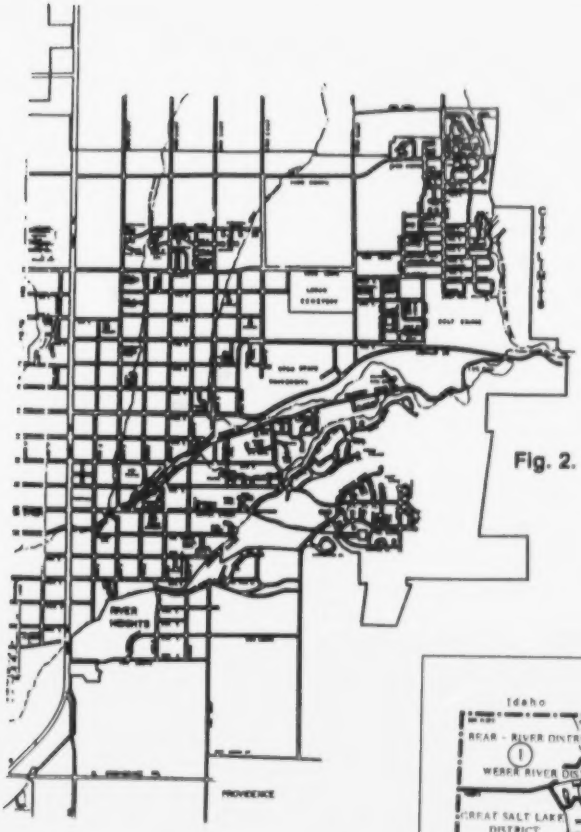

Fig. 2. Supply Analysis Boundaries

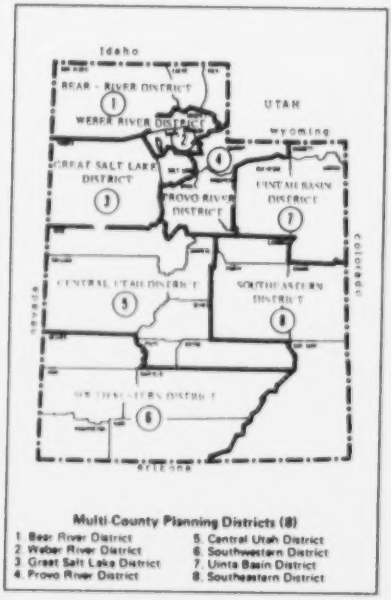

Fig. 3. Planning Districts

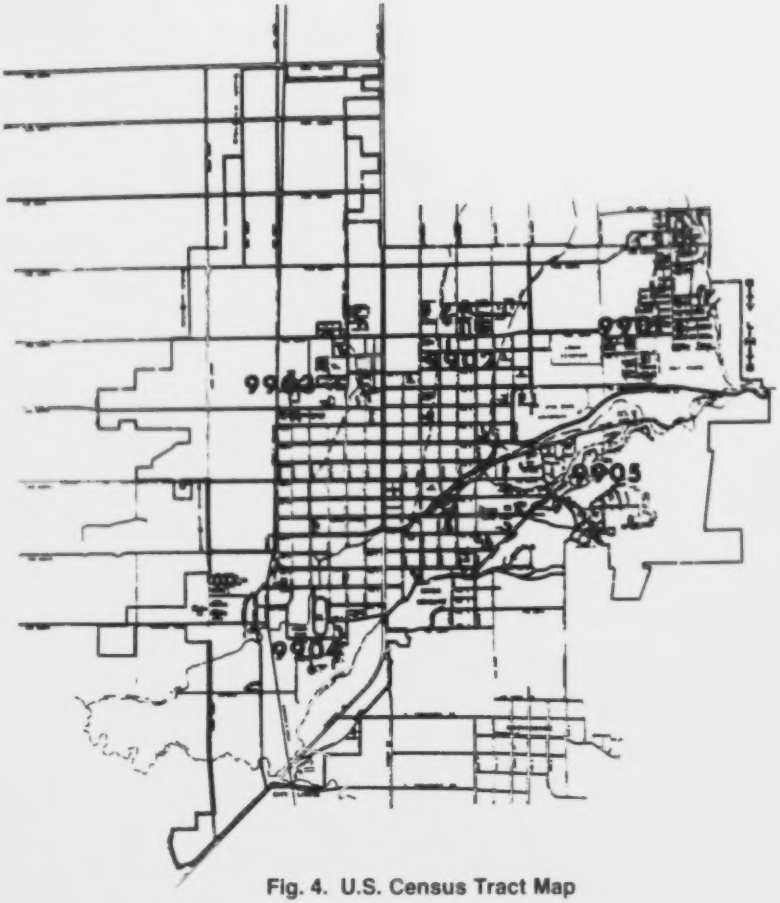

Fig. 4. U.S. Census Tract Map

The purpose of assigning a quadrant or planning district number, letter, or name is for identification purposes. Population size, distance, and area size information are for analysis procedures performed later in the master plan.

Information on quadrant population size is available from the U.S. Census Report compiled every ten years. The population of each city is broken down even to number of residents per block. City, county, state, or federal planning offices would have this information as well as governmental engineering documents for determining distance of the planning area.

Step 4. The master plan writer must now identify all parks and recreation resources, facilities, and programs available within each of the different quadrants or planning districts. This task can be simplified by the use of a supply analysis worksheet (see appendix). In order to facilitate the supply analysis process a few procedural suggestions are helpful. Identify each parks and recreation resource, facility, or program that is available in that quadrant and what agency sponsors that service. Also identify, if applicable, any equipment that is present at that site and the condition level of that equipment (see Figure 5).

The supply analysis information can generally be obtained by two methods: looking at previously developed maps or analysis sheets or (as in most cases) going to the actual quadrant area and sending small teams of workers or volunteers to walk through the area tabulating the information asked for on the supply analysis worksheet (see Table 3).

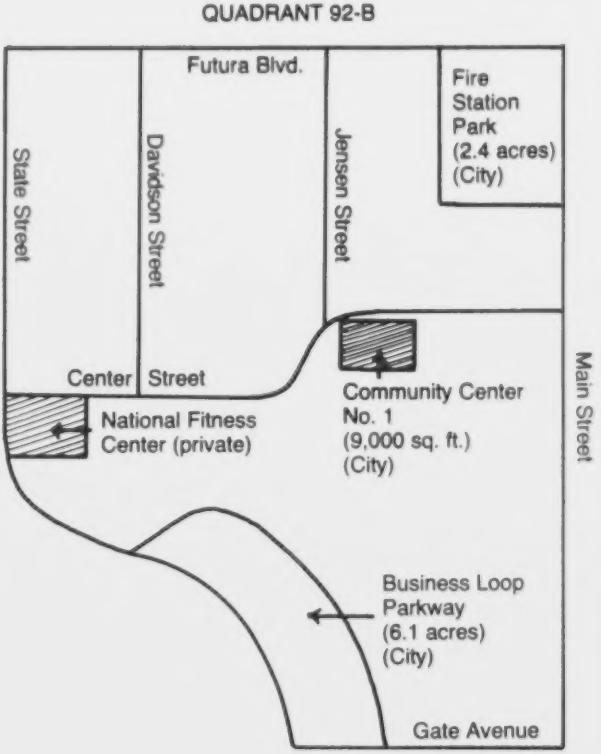

Fig. 5. Parks and Recreation Resources Available in a Specific Quadrant

Table 3. Inventory of Outdoor Recreation Facilities in Utah, 1970

Facilities	Urban Units	Area Sites	Total Units	Total Sites
Camping				
All camping facilities	1,530	60	9,396	350
Picnicking				
All picnic facilities	6,075	247	12,262	882
Golf Courses				
9-hole courses	23	23	27	27
18-hole courses	29	29	35	35
Trails				
Interpretive motor trails (in miles)	2	1	90	9
Interpretive foot trails (in miles)	1.3	2	15.1	38
Water-oriented sports				
Marinas (parking spaces & sites)	364	8	2,942	35
Boat ramps (number & sites)	11	9	88	73
Winter-oriented sports				
Ice skating rinks (in square feet & sites)	171,060	10	307,675	19
Rope tows (number & sites)	9	4	25	16
Bar lifts (number & sites)	7	6	10	10
Chair lifts (number & sites)	15	5	36	12
Ski runs (number & sites)	40	6	255	18
Length of ski runs (in miles & number of sites)	36	3	461	18
General winter recreation areas (number of tobogganing-tubing runs and/or length in miles	3	10	5	22
Other intensive play areas				
Playgrounds (acreage & number)	2,345	486	2,613	659
Playfields (number & sites)	394	258	659	485
Outdoor swimming pools (square feet area & number)	255,138	48	321,361	79
Tennis courts (number & sites)	298	106	435	190

Source: Institute for the Study of Outdoor Recreation and Tourism, Utah State University, *Inventory of Outdoor Recreation Areas and Facilities in Utah, Summer, 1967.* UORA updates.

Data not included in Utah State University's 1967 inventory from other sources:

Bicycle trails: 357 miles (99% on federal lands)
Trail bike trails: 2,960 miles inventoried by federal government as scooter trails and horseback trails (1966)
Horses in Utah: Over 95,000 inventoried in 1970.
Motor vehicles in Utah: Over 625,000 registered, 1970.
Motorcycles and trailbikes registered: 28,973 (35.8% increase over 1969; i.e., 21,330 registered cycles and trailbikes.
Snowmobiles: 8,200 registered, estimated: 10,500, 1971.
Boats in Utah: 1970: 30,894, 1971: 34,612.

WRITING THE SUPPLY ANALYSIS SECTION OF THE MASTER PLAN

The supply analysis section of the master plan should contain the following information:

I. Introduction to the supply analysis process
- A. Explanation of supply analysis boundaries
- B. Explanation of planning district divisions

II. Identification and description of all of agency supplied parks and recreation resources, facilities, and programs
- A. Explanation by narrative paragraphs
- B. Explanation by maps or diagrams
- C. Explanation for each planning district

III. Identification and description of all nonagency supplied parks and recreation resources, facilities, and programs
- A. Explanations by narrative paragraphs/maps
- B. Explanation for each planning district
- C. Explanation of provision by: (excluding your agency)
  1. City government
  2. County government
  3. State government
  4. Federal government
  5. Private enterprise
  6. School districts
  7. Religious organizations
  8. Volunteer organizations
  9. Universities or colleges

IV. Summary chart
- A. Identification of all parks and recreation resources, facilities, and programs available, and which agencies provide those services
- B. Identification of percent each agency represents as the provider of that service

V. Explanation of above services designed for availability to the handicapped

4

Population Analysis

When a parks and recreation master plan is developed, its purpose is to provide a long-range planning direction for parks and recreation resources that are utilized by people. The service population is a critical aspect of the planning, and ultimately, the population is the receiver of the planning efforts.

WHAT IS A POPULATION ANALYSIS?

A population analysis is the determination of the characteristics of the citizenry of the agency's service area. Specifically, the population is analyzed relative to:

1. Demographics—age, income, gender, education, ethnicity, and,
2. Trends—growth, distribution, and projection.

To more fully understand this definition, the following breakdown of key elements is provided.

1. **Population demographics.** It is important that the master plan be developed in relationship to the population that will be served by that master plan. Therefore, the age of the population, specifically under age 5, over age 18, and over age 65 are identified, as well as the median age. Income is analyzed, not only per capita, but median income per household and median income per family. The gender consists of the percent of the population that is male and the percent that is female. Education is described relative to the percent of the population who are high school graduates. Lastly, the ethnicity of the population is described generally for White, Black, American Indian, Asian, and Spanish origin.

   The purpose of population demographics is to assure the planning process that as accurate a data base as possible about the population being served, is utilized.
2. **Population trends.** Also analyzed are any trends within the population—specifically growth, distribution, and projection. If the growth rate of the population can be determined, then much of the master plan information can have relevance to that growth aspect. For example, if the master plan indicated that the city provided sufficient parkland for the number of people currently living within the city, the

addition of park acreage could be plotted based on the expected growth of the population. The distribution of the population within the city is also significant. For example, if the city provides sufficient parkland for the overall population in numbers, then the planners would probably recommend no changes. However, if the layout of the parks (i.e. 2 in Heights area, 3 in Valley, 1 in Northwest, and 0 in Southwest Quadrant of the city) was not in relationship to the population distribution (i.e. Valley having the least city population and the Southwest Quadrant having the greatest) then the planners' recommendation would be quite different. Lastly, the population projection can indicate to the planners if the trend in population is going up dramatically (hence, immediate increase in need for parks and recreation services), is at a plateau, or if the trend is dropping (hence, caution in future development of park resources) in the community being served.

PURPOSES OF THE POPULATION ANALYSIS

These are several purposes for performing a population analysis. Identified below are some of those purposes.

1. The planning process does not occur in a vacuum and the population served is most critical. Therefore, one of the primary purposes of the population analysis is to be sure that the master plan meets the needs of the population it is designed for.
2. The population analysis provides the planner with information that can dramatically alter the recommendations of the master plan.
3. The population analysis provides not only current information (current planning needs) but future information (future planning needs).
4. The population analysis can identify very specific planning information for very specific communities. For example, Sandy City, Utah, has the highest birthrate of any city in the United States and highest percentage of population under the age of 5. The parks and recreation master plan for that community (also based on future trends) will be largely affected (number of playgrounds, tot lots, playground equipment) by that specific piece of population information.

HOW IS A POPULATION ANALYSIS PERFORMED?

Generally, the population analysis is rather easy to develop based upon the master plan writer's access to key population records. The first step is to collect as many of the following documents as possible (available from city, county, state or federal planning offices, libraries, or from the specific agency indicated):

1. Census of Population, General Social Characteristics (for your city, county or state)—U.S. Bureau of Census.

2. Survey of current business—U.S. Department of Commerce.
3. State health statistics—your state bureau of health statistics.
4. State economic and business review—your state's major university or city chamber of commerce.
5. Statistical abstract of the United States—Bureau of the Census.
6. Any specific planning (population) documents available from governmental agencies (for example, "The Tri-County Population Report") or from the state's major university ("Bureau of Economic and Business Research Report").

The next step is to analyze what information is available that applies to your local community and then to build charts, tables, or diagrams that will help the master plan writer in applying that information to the key areas of demographics and trends.

The third step is to write a narrative paragraph about each population characteristic and then to display the respective chart or diagram. The following are examples:

Age of Population (Figure 6)

"Historically, the median age of __(city)__ has been consistently below the state average and the national average. In 1950, it was 25.1 years compared with 30.2 years for the state and 31.6 for the nation. By 1960 the city's age dropped . . ."

Income of Population (Table 4)

"The 'Personal Income Receipts' illustrates that __(city's)__ total personal income receipts for the 10 one-year periods beginning in 1970 and ending in 1980 were. . ."

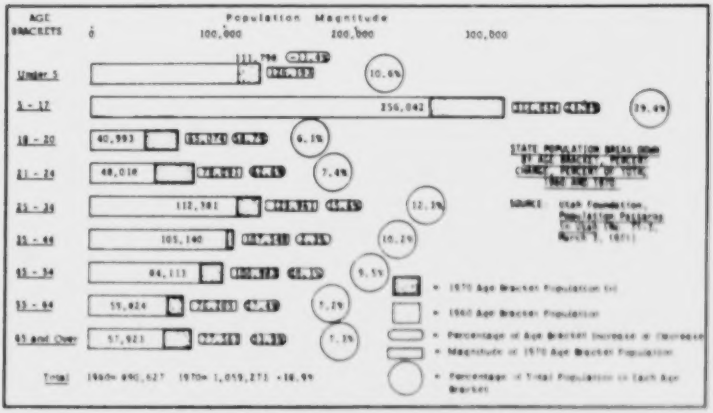

Fig. 6. State Population Breakdown

" (city's) 1980s per capita personal income was $5,552. This increased by 62 percent from the 1970 figures. Comparing (city's) figures to the cities adjacent to the community indicates that . . ."

Gender of Population (Table 5)

" (city's) percent of population female for 1980 was 50.9 which represents a slight increase from 1970s figures of 50.1 percent. Comparing (city) to the countywide figures . . ."

Table 4. Utah's Total Personal Income Receipts, 1958–1971 (Millions of dollars)

Year	Personal Income	Percent of Change
1958	1,547	4.4
1959	1,676	8.3
1960	1,771	5.7
1961	1,909	7.8
1962	2,072	8.5
1963	2,155	4.0
1964	2,218	2.9
1965	2,355	6.2
1966	2,513	6.7
1967	2,667	6.1
1968	2,888	8.3
1969	3,109	7.7
1970	3,416	9.9
1971	3,731	9.2

Source: U.S. Department of Commerce, *Survey of Current Business*, August, 1968 and April, 1972.

Table 5. Population Gender by City

City or Town	Total	Female
The State	1,461,037	50.4
Salem County	57,176	50.1
Amalga (town)	323	46.4
Clarkston (town)	562	51.2
Atwood (town)	181	54.1
Gibson (city)	1,495	48.5
Hillsdale (city)	3,952	49.4
Irving (city)	26,844	50.9
Rollins (city)	663	49.0
Gatewood (town)	848	51.1
Newton (town)	623	47.2
Francis (town)	1,036	49.1
Fremont (city)	2,258	49.8
Dawson (town)	542	52.0
Henderson (city)	2,675	48.9

Education of Population (Table 6)

"__(state)__ has the distinction of leading the nation in the median years of education completed by its population. __(city)__ is 12th in the median years of education within the state. With an average of 68 percent of the 1980 population receiving a high school diploma and . . ."

Ethnicity of Population (Figure 7)

"As noted in the 'Minority Group Population Report,' __(city)__ has a small minority population in terms of number and percent of total state population. In addition, the racial composition . . ."

Table 6. Educational Attainment—Persons 25 Years and Older

County and District	Median Years 1970	Median Years 1980	Percent with Less than 5 Years Completed	Percent of Population 25 and Over High School Graduates Total	Male	Female	Percent 4 or More Years Completed
Box Elder	12.5	12.3	2.21	66.0	67.1	66.8	12.2
Cache	12.8	12.4	1.12	74.2	73.6	74.7	22.9
Rich	12.4	12.1	.95	66.6	69.0	66.2	13.0
Bear River	12.6	12.3	1.56	71.5	70.8	72.2	18.3
Morgan	12.6	12.2	.49	75.2	75.0	75.3	10.5
Weber	12.4	12.2	2.00	64.8	65.2	64.4	11.5
Davis	12.6	12.4	1.46	74.0	74.8	73.3	14.4
Weber River	12.5	12.3	1.75	68.7	69.3	68.1	12.7
Salt Lake	12.5	12.2	1.86	67.4	67.5	67.4	15.0
Tooele	12.3	12.0	1.66	60.7	59.6	61.9	9.9
Great Salt Lake	12.5	12.2	1.85	67.1	67.1	67.2	14.8
Summit	12.4	12.2	.48	66.5	65.4	67.5	9.2
Utah	12.6	12.2	1.79	72.7	73.1	72.4	16.1
Wasatch	12.4	12.2	1.51	67.2	67.5	67.0	9.5
Provo River	12.6	12.2	1.71	72.2	72.5	71.9	15.5
Juab	12.3	11.7	2.29	61.8	59.8	63.7	7.6
Millard	12.4	12.1	1.27	62.9	61.0	64.7	9.6
Piute	12.4	12.2	—	67.5	72.8	62.2	10.8
Sanpete	12.3	11.7	1.72	58.1	56.3	59.7	9.0
Sevier	12.3	12.1	.96	63.0	64.4	61.7	9.6
Wayne	12.1	11.8	1.18	54.3	49.5	59.0	8.9
Central	12.3	12.0	1.39	61.1	60.3	61.8	9.4
Beaver	12.3	12.0	.58	60.7	58.5	62.8	8.4
Garfield	12.2	12.0	1.31	59.0	59.3	58.8	8.7
Iron	12.8	12.4	1.30	73.9	73.6	74.2	14.3
Kane	12.5	12.1	1.49	66.9	64.4	69.4	13.4
Washington	12.4	12.0	1.67	61.3	59.5	63.0	11.6
Southwestern	12.5	12.1	1.27	65.5	64.3	66.6	11.9
Daggett	12.1	12.2	—	52.9	52.9	52.9	5.1
Duchesne	12.1	11.4	1.65	54.0	51.5	56.5	10.8
Uintah	12.3	11.7	2.14	59.4	58.8	60.0	8.6
Uintah Basin	12.2	11.7	1.89	57.2	56.0	58.5	9.3
Carbon	11.7	10.7	6.26	47.8	45.2	50.3	6.8
Emery	12.2	11.4	1.36	58.2	56.4	60.1	7.2
Grand	12.2	12.0	1.68	56.0	54.6	57.4	7.4
San Juan	10.7	10.4	27.0	44.0	45.8	42.1	8.8
Southeastern	12.0	11.0	9.05	50.0	48.7	51.3	7.4
STATE TOTAL	12.5	12.2	2.02	67.2	67.2	67.3	14.0

Source: Derived from U.S. Bureau of the Census. *Census of Population, General Social and Economic Characteristics, Utah*, PC (1)-C46.

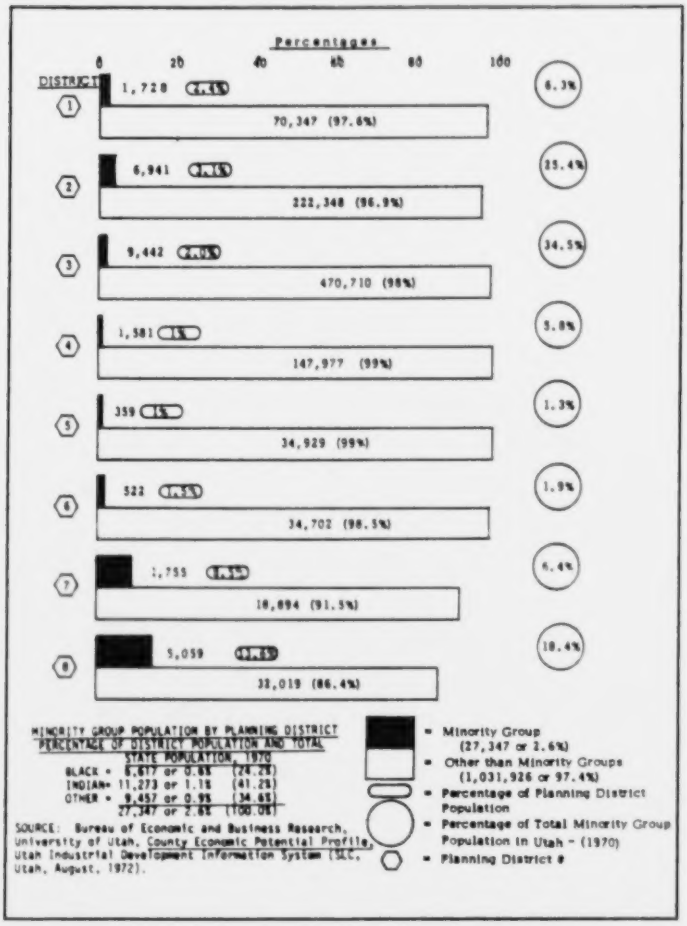

Fig. 7. Minority Group Population by Planning District

Population Growth (Table 7)

"During the last 50 years, __(city)__ has experienced rapid population growth. From 1930 to 1980 the population increased 106 percent as compared to the state average of 92 percent and a national average of . . ."

Table 7. Population of the United States, Distribution by Section and Region, 1930–2000[1]

1930		1950		1960		1965		1980[2]		2000[2]	
Millions	Percent	Millions	Percent	Millions	Percent	Millions	Percent	Millions	Percent	Millions	Percent
123.2	100.0	151.3	100.0	179.3	100.0	193.8	100.0	242.3	100.0	335.0	100.0
34.4	27.9	39.5	26.1	44.7	24.9	47.6	24.5	57.0	23.5	74.8	22.4
8.2	6.6	9.3	6.1	10.5	5.8	11.1	5.7	13.4	5.5	18.0	5.4
26.2	21.3	30.2	20.0	34.2	19.1	36.5	18.8	43.6	18.0	56.8	17.0
38.6	31.3	44.4	29.4	51.6	28.8	54.1	27.9	63.7	26.3	85.8	25.6
25.3	20.5	30.4	20.1	36.2	20.2	38.2	19.7	45.9	18.9	62.8	18.7
13.3	10.8	14.0	9.3	15.4	8.6	15.9	8.2	17.8	7.4	23.0	6.9
37.9	30.8	47.2	31.2	55.0	30.7	60.1	31.0	76.1	31.4	104.0	31.0
15.8	12.9	21.2	14.0	26.0	14.5	28.8	14.9	37.7	15.6	53.6	16.0
9.9	8.0	11.5	7.6	12.0	6.7	12.8	6.6	15.1	6.2	19.2	5.7
12.2	9.9	14.5	9.6	17.0	9.5	18.5	9.5	23.3	9.6	31.2	9.3
12.3	10.0	20.2	13.3	28.0	15.6	32.0	16.6	45.5	18.8	70.4	21.0
3.7	3.0	5.1	3.3	6.8	11.8	7.7	4.0	10.5	4.3	15.5	4.6
8.6	7.0	15.1	10.0	21.2	3.8	24.3	12.6	35.0	14.5	54.9	16.4

[1] Includes Alaska and Hawaii for all years.

[2] In projecting 1980 and 2000 outdoor recreation participation from the 1965 Survey of Outdoor Recreation Activities, this series (B) was used. (See Appendix V, Vols. II and III.) There are recent indications that a slightly lower range (C) may be more representative of present conditions.

Source: U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 1967; Population estimates, Series P-25, No. 362; and unpublished data.

Population Distribution (Figure 8)

"__(city)__ has traditionally been broken down into a number of planning districts. The figure depicts the number of residents living in each planning district and the percent that it represents of the whole . . ."

Population Projection (Table 8)

"The Tri-County Population Projections for __(city)__ indicate that the city can expect a 19 percent increase in population by the year 1990 with . . ."

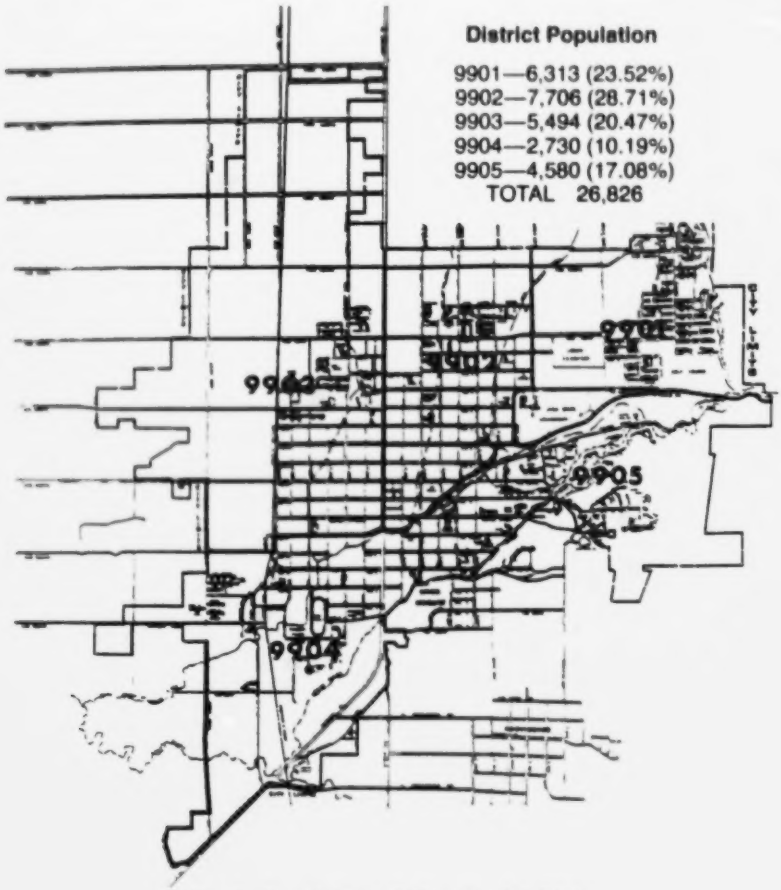

Fig. 8. Population of Planning Districts

Table 8. Projected Future County Populations, 1985–2000

	1980	Ratio Applied To Future Years	1985	1990	1995	2000
Willow	33,222	37.0%	42,661	47,027	50,431	53,280
Cowen	57,176	60.5%	69,756	76,895	82,461	87,120
Dunlap	2,100	2.5%	2,883	3,178	3,408	3,600
District	92,498	100.0%	115,300	127,100	136,300	144,000

OUTLINE OF A POPULATION ANALYSIS

The population analysis should follow the outline of key information presented here.

I. Population demographics
   A. Age of population
   B. Income of population
   C. Population gender
   D. Educational levels of population
   E. Population ethnicity

II. Population trends
   A. Population growth
   B. Population distribution
   C. Population projection

III. Other population statistics peculiar to location
   A. Sources of income
   B. Percent of population over 65
   C. Major population shifting

SUMMARY

The population analysis is critical to the proper understanding of the master plan data. It is the collection of key information regarding population demographics and trends. Its primary purpose is to provide planners with basic information as to whom the planning is occurring for and what changes are indicative of that population. Collection of needed documents, analyzing, and describing that collected information is the general process of the population analysis.

5

Demand Analysis

One area of major concern to a properly developed master plan is to delineate and analyze the current and future demands (or desires, wants, participations, needs) for parks and recreation services in that community. One of the most effective indicators of what services should be provided to a community are the actual statements made by those community residents as to what is important.

WHAT IS A DEMAND ANALYSIS?

A demand analysis is a three-pronged approach for determining what citizens currently demand (desire), what they want in the future, and what parks and recreation activities they are currently participating in. The demand analysis consists of performing:

1. A program analysis which identifies the current participation rates of community residents in the agency's parks and recreation programs and services.
2. A community needs assessment (survey) to determine random citizen input regarding a variety of critical demand issues.
3. A series of public hearings to assess nonrandom citizen input to determine the desires of citizens regarding the provision of parks and recreation services.

PURPOSES OF A DEMAND ANALYSIS

The demand analysis provides the master plan writer an accurate assessment of what the community residents desire in the area of parks and recreation. Some of the purposes of the demand analysis are to:

1. Determine precisely what current activities and resources are popular as measured by actual participation.
2. Determine precisely what current activities and resources are not popular as measured by lack of participation.
3. Provide an opportunity to participate in the planning process by conducting:

a. a service area wide survey of interests, desires, participations, priorities, and awareness factors by randomly selected citizens.
b. a series of public hearings open to residents of the service area to assess on a nonrandom basis the residents' desires, interests, participation, priorities, and awareness factors.

4. Establish a data base that goes beyond the master plan writer's own perspective of what is important to a community.
5. Determine trends or changes in the desires of community residents relative to parks and recreation (leader-based activities versus individual activities).

HOW IS A DEMAND ANALYSIS PERFORMED?

The demand analysis consists of three separate actions, each of which requires very specific steps: (1) the program analysis, (2) the community needs survey, and (3) the public hearing process. These three actions are identified below with the required steps necessary for each action.

Action 1: Program Analysis

The program analysis is the identification of actual citizen participation rates in the existing parks and recreation services. Generally, this information is hard to accumulate unless the respective agencies keep detailed records of participation. Because of the constant evaluation process of parks and recreation agencies, some sort of participant records are usually kept. Due to the great variety of record keeping systems, only general steps can be suggested.

Step 1. Determine what records are available that indicate participation rates for the respective parks and recreation programs.

Step 2. Isolate those records that are resource-based (parks, playgrounds, etc.) and those that are program-based (softball games, tennis lessons, etc.)

Step 3. Develop charts, diagrams, or tables that describe the current participation rates in each of those general areas (resource-based/program-based).

Step 4. Develop narrative statements that describe the gathered information.

Clubs

The city of _____ provides clubs of a recreation nature to the city residents. The total number of participants in the clubs are indicated, along with the following specific club activity breakdown . . . etc.

City Sponsored Clubs
1. Youth Council
2. Archery Club

3. Racquetball Association
4. Softball Association
5. Philmore Aquatic Club

Tournaments

Active participation in recreation tournaments remains high as indicated by the number of participants in the city recreation provided tournaments. The city offered tournaments for participants consisting of the following citizen involvement . . . etc.

City Sponsored Tournaments
1. Ice Breaker Softball
2. Fall Racquetball Open
3. Youth Baseball Tournament
4. Philmore Swimming Championship
5. Youth Soccer Championship

Clinics

Direct instruction in a variety of recreation activities has always hallmarked __(city's)__ recreation program. During the last fiscal year 27,192 residents received specific instruction in 140 clinics. The following table indicates . . . etc.

City Sponsored Clinics
1. Swim Classic
2. Youth Baseball Classic
3. Official's Basketball Workshop
4. Drama Production Clinic

Special Events

The city of _____ offered 42 special events during the last calendar year in which 104,000 citizens participated. The special events were highlighted by . . . etc.

City Sponsored Special Events
Life. Be in it
Hershey's track and field youth program
Pioneer day
Home enterprise fair
Concert in the park
Master swim meet
Teen nights
Fun Run
Challenge series

Jack-o-lantern contest
North Pole calling
Swim-a-thon
B.Y.O.T. (Bring your own tube night)
Free movie nights

Open Recreation

The city of _____ provides a number of facilities open to the general public for a cost and for free. At the conclusion of last year's program the following . . . etc.

City Sponsored Open Facilities
Recreation center—360 days/year, 4,192 hours/year to public
Municipool—junior high school contract—1,440 hours/school year, 2,056 hours/year to public
Parks—16 parks open sunrise to sunset, two areas are available for reservations at Willow Park
Willow Park Zoo complex—Open 363 days/year sunrise to sunset; closed Christmas and New Year's
Quadruplex—4 softball fields open sunrise to sunset
Ball fields—open to public when not prepared for city use
Ice rink—open 2–10 P.M. weather conditions permitting

Action 2: Community Needs Survey

The community needs survey is one of the most critical aspects of a community master plan. Most master plans rely heavily on the results of the random community input in justifying the actions necessary for the future. It is very comfortable to use "actual community input" as the rationale for decisions made that have an impact on parks and recreation services. It should be noted that the survey will be the most time-consuming aspect of the master plan and also the most costly. If the parks and recreation administrator is not skilled in low-level research techniques, specifically in the area of community surveying, and does not have the available staff or volunteer help to conduct the survey, then a private survey consulting firm is usually hired. The standard cost of hiring a consultation firm to survey your community is usually $.10 per resident in the service area. However, that does not mean that all residents will be surveyed. Usually the firm will survey a randomly drawn sample of the total population. If the sampling technique has been properly developed, then the results of the survey can be generalized to the total population (given a small measure of error). The following outlined steps are helpful for the administrator trained in surveying.

Step 1. Determine what information is necessary for the master plan. Usually the community needs survey asks questions about the following nine general categories.

- Importance of parks and recreation to community residents.
- The resident's awareness of current programs and facilities.
- The resident's current participation in parks and recreation activities.
- What facilities and programs the community residents desire to see increased, decreased, or remaining the same.
- What facilities or program fees should be charged participants.
- What methods of funding increased facilities and programs are most desirable to community residents.
- Ranking the importance of parks and recreation facilities and programs.
- Demographic information.
- Open-ended statements—suggestions.

Step 2. Determine the number of residents that should be surveyed. The parks and recreation survey cannot ask every resident what they desire (due to time and financial constraints) so the master plan writer or survey specialist must select either:

- How many residents can be surveyed considering time and money, or
- How much confidence and error are allowable in the results of the survey.

If the surveyor can contact as many people as desired, Table 9 will assist the surveyor in selecting the confidence limits (the level of confidence that, within a range of error, the representativeness is accurate), and the tolerated error (the degree of difference between an exact representation of the sample to the total population).

Step 3. Write the survey questions. There are four considerations that affect question construction:

- Kinds of questions
- Forms of questions
- Content of questions
- Sequence of questions

Table 9. Sample Size for Several Degrees of Precision (100,000 Population)

Tolerated Error (%)	Confidence Limits	
	95 Samples in 100	99 Samples in 100
1	9,604	16,587
2	2,401	4,147
3	1,067	1,843
4	600	1,037
5	384	663
6	267	461
7	196	339

- *Kinds of Questions*
  1. *Fact questions*
     a. ask the respondent to provide information about himself, such as age, gender, income, education, marital status, etc.
     b. purpose is to verify representativeness of sample and to profile the results of the study.
  2. *Opinion and attitude questions*
     a. ask the respondent about his feelings, beliefs, ideas, misconceptions, and presuppositions.
     b. purpose is to determine how the respondent feels about an issue at that point in time.
  3. *Information questions*
     a. ask the respondent what he knows, how much he [illegible] how he happens to know and when he first knew that info[illegible]
     b. may run counter to attitude questions because pe[illegible] eel differently in spite of knowledge.
  4. *Self-perception questions*
     a. ask the respondent to evaluate something about his own behavior in relation to others.
     b. self-perception—a person's reporting facts colored by attitudes.
- *Forms of Questions*
  1. *Unstructured questions*
     a. open-ended or free response question; the respondent is free and encouraged to respond without controls.
     b. purpose is to discover unknown information that is so variable that categorization is impossible.
  2. *Structured questions*
     a. the respondent is required to answer to a fixed alternative response.
     b. purpose is to gather information that can be specifically tabulated.
- *Content of Questions*
  1. *Ambiguity.* The subtleties are lost upon the respondent.
     a. incomplete—"Did you vote in the last election?"
     b. imprecise—"How concerned are you with 8 percent unemployment?"
     c. indefinite in time—"How often do you vote?"
     d. indefinite comparisons—"Do you think the Logan water law is fair?"
     e. simple words—"Are there any voters living around here?"
     f. complicated words—"Do you feel the government should . . . ?"
     g. generalizations—"Do you believe that most low income people are Democrats?"
  2. *Misperception.* Words that lie outside the respondent's experience have no meaning for that person.

3. *Loading.* When a particular response is more desirable than another.
   a. unfair alternatives—"Some people say Logan is spending too much money on recreation. Do you agree or disagree?"
   b. maligning—"Do you think we should waste any more of the city's money building recreation programs?"
   c. omitting names—"John Jensen is one of the candidates for mayor. Who is your choice in that race?"
4. *Emotionally charged.* Words used to distort the meaning.
   a. stereotypes—"Congressman Jones, a suspected communist . . . ?"
   b. prestige linking—"President Kennedy's farm program . . . ?"
5. *Embarrassing.* Questions stated in such a way the respondent is embarrassed into a specific response.
6. *Special wording.* Questions that assume too much knowledge on the part of the respondent.
7. *Lengthy.* Questions that tax the respondent's comprehension and exhaust patience.
   a. labored—the question is so long that the respondent misses the point.
   b. two-part—"Do you think Mayor Jensen should run again, or could the Democrats find a better candidate?"
   c. colloquialisms—words that change in meaning over a period of time.
   d. slang—words not universally understood.
   e. negatives—"Which one is not . . . ?"

- *Sequence of Questions*

1. *Introduction.* Must be able to create a good impression, be short, realistically worded, and nonthreatening. It should also be serious, neutral, and pleasantly firm.
2. *Warm-up.* Questions which serve to build rapport with the respondent that also provide the interviewer with needed information.
3. *Body of the study.* Asked here are the questions that are of specific interest to the study.
4. *Demographic characteristics.* Questions that give the survey relevance by profile building of the typical respondent.

Step 4. Select survey areas. To make the survey results representative of the community, the researcher must select from the different regions of the community the number of residents that are proportionate to the total population of the community. See Table 10 for an example.

Step 5. Go into the field. The surveyor must now prepare to take the community needs survey out to the public. Therefore, the following items need to be dealt with:

- Pretest the survey by asking a small group of residents (usually 20–30) to answer the survey. Any errors within the survey will emerge at this time allowing time for correction.

- Train surveyors by going over the survey and establishing a standardized door approach.
- Develop an interview kit which contains the items that each surveyor will need (number of surveys, pencils, addresses, clip board, etc.)
- Provide a trouble number that surveyors may call if for any reason they need help or have questions.

Step 6. Analyze the survey results. Usually the survey question can be coded so that a computer program can compute the responses from the survey. If the number of surveys is small, hand computation is possible. The usefulness of the results of the survey will depend to a large extent upon how the master plan writer chooses to use the available data. Table 11 is an example of how data compiled from questions asking community residents what programs and facilities they would like to see increased or decreased, might be presented.

The master plan writer can conclude that this information represents the major direction that the community parks and recreation agency should be guided by or the master plan writer may conclude that this information is only one piece of information that will have impact on future directions.

Table 10. Selecting a Representative Sample

District	Population	Percent of Total	3 Percent Error in 99/1000 Cases
9901	6,313	23.52	141
9902	7,706	28.71	172
9903	5,494	20.47	122
9904	2,730	10.19	61
9905	4,580	17.08	102
TOTAL	26,844	100.00	598 surveys

Table 11. Results of Community Needs Survey

Ranking	Activity/Facility	Percent Increase	Percent Decrease
1	Outdoor swimming pool	68.512	1.10
2	Ice skating area	65.940	1.74
3	Youth employment program	58.800	2.34
4	Nature paths	48.660	1.84
5	Fitness trails	43.800	2.12
⸗	⸗	⸗	⸗
37	Golf course	22.880	7.18
38	Karate/Judo	16.020	6.46
39	Rifle range	31.600	8.18
40	Motorcycling	23.340	22.42

Action 3: Public Hearing

In an attempt to determine nonrandom public input, the master plan developer should arrange with community officials for a public hearing or a series of public hearings to receive input on the current and future trends of parks and recreation from the community residents. The public hearing allows individuals or groups to directly voice their concerns and desires relative to future directions. The primary difference between the community survey and the public hearing is shown in Table 12.

Identified below are specific steps for conducting a public hearing:

Step 1. Determine the specific topic that the public hearing will deal with. For example: "The Future of Parks and Recreation in _____." However, the more specific the title and details of the public hearing, the more specific the information that is generated.

Step 2. Arrange for a public facility and time that is convenient to the greater number of residents. Usually, public office auditoriums, libraries, or the recreation center offer free and appropriate locations. Generally an early evening time frame (7–10 P.M.) is most suitable (depending on the community).

Step 3. Arrange for public notice of the meeting by asking the local radio stations and newspapers to include the public hearing announcement in their public awareness broadcasts or section of the paper. A minimum of two weeks is the lead time for public awareness.

Step 4. Arrange for an extra notification attempt the day before the public hearing to serve as a last minute reminder.

Step 5. Arrange for seating of the crowd, microphone for public input, and a center table for the master plan writer and/or committee to be seated

Table 12. Comparison of the Community Survey and the Public Hearing

Community Survey	Public Hearing
1. Time-consuming (generally a three-month process)	1. Limited time element (3 hour session with two weeks prior notice)
2. Expensive (paper, computer, interviewers, consultation firm)	2. Limited cost (perhaps rent of a local facility, usually donated)
3. Random input (representative of total community)	3. Nonrandom input (representative of individual or special interest group)
4. Structured information (may obtain answers to specific questions)	4. Structured setting (only receive general answers to general questions)
5. Control community involvement (by selection of the number of residents who will participate in survey)	5. No community involvement control (few numbers of people may attend or participate)

at. Also arrange for tape recording and secretarial assistance for recording information.

Step 6. Establish rules for the public hearing, announce the rules at the public hearing, and then follow the established rules. The public hearing guidelines may be altered but generally the following are acceptable:

- Each person wishing to speak must do so at the microphone and must state their name and residence (city or area within city).
- Those individuals speaking that represent themselves are allowed three minutes.
- Those individuals speaking that represent a group are allowed five minutes.
- An individual may only speak once until all others desiring to speak have had an opportunity to do so.
- An individual may speak a second time only if that individual is providing new information.
- No arguments, debates, or rebuttals should override public input or courtesy.
- A specific ending time for the public hearing should be established and announced before the public hearing.
- Written reports on behalf of individuals not in attendance may (should) be read into the minutes of the meeting.

Step 7. At the conclusion of the public hearing the announcement should be made that the minutes of the hearing are public and copies will be available at an acceptable, later date. The minutes should be typed and prepared for master plan analysis.

SUMMARY

The demand analysis allows the master plan developer to ascertain three specific pieces of information: What are community residents currently doing (program analysis), what do those community residents desire (community survey), and what do the community residents say they want (public hearing). The demand analysis and particularly the community needs assessment serves as a major factor in the overall master plan. The survey aspect is usually very time-consuming and costly but it generates the most accurate information.

6

Standards Analysis

One of the major contributions that a master plan makes to a community is a relative perspective of that community's parks and recreation status to the nation as a whole. Does the community have the "proper" number of tennis courts as a typical community of its size and population should have? The completion of a standards analysis will allow a specific comparison to established national standards or guidelines.

WHAT IS A STANDARDS ANALYSIS?

A standards analysis is a process of identifying and comparing existing parks and recreation facilities and resources to nationally accepted standards for those facilities and resources. The standards analysis provides a comparison of one community's resources to a national standard which is based on population and distance. For example, Community A has 14 tennis courts available for community resident usage. The question is asked, "Are 14 tennis courts enough or does the community need more?" One way to answer this question is to compare the number of tennis courts available in the community to the national standard for tennis courts. The national standard for tennis courts is: 1 tennis court for every 2,000 residents. Community A has a population of 26,000. Therefore, the community meets the tennis court standard. (26,000 ÷ 2,000 = 13)

PURPOSES OF THE STANDARDS ANALYSIS

A standards analysis accomplishes many critical planning decisions. Some of the purposes of a standards analysis are to:

1. allow a community to determine if the overall community is in line with the nationally accepted parks and recreation standards.
2. allow the community to determine what facilities and resources are needed and which ones provide an over-abundance (from a standards viewpoint).
3. make obvious, shortages or overages and prevent "personal bias" regarding the appropriate supply of parks and recreation resources.
4. allow the community to determine if specific areas within the community do not have adequate resources despite the fact that the overall community meets the standards. For example, in the above described example of

tennis courts available in Community A, it was found that the community provides the proper number of courts per population. However, detailed analysis might show that the majority of the courts are on the east side of the community and very few courts are on the west side. The standard also identifies the service radius for tennis court usage to be 1/4–1/2 mile. This means that there should be 1 tennis court for each 2,000 residents in a 1/4–1/2 mile radius of that population. The conclusion from the more detailed standards analysis might indicate that more courts are necessary on the west side of the community despite the fact that the overall community has the appropriate number of courts.

5. The standards analysis provides an excellent starting ground for planning with a very specific data base as the foundation.

EXPLANATION OF STANDARDS

Many times "standard" is used as the final word on the proper amount of facilities a community needs. It should be made clear that while standards are very helpful, individual community variations must also be considered. For example, a sun-belt city might need more outdoor swimming pools than a community in the Northeast regardless of the standards for outdoor swimming pools. A standard is a guide, a benchmark, a direction identifer, and should not be considered the absolute, definite statement for every community. The National Recreation Park Association (NRPA) has developed a mathematical formula for determining standards for your specific community as well as providing general parks and recreation standards. Individual communities may also decide that their specific community needs its own specific standards. However, parks and recreation standards are extremely helpful in determining a community's relative standing specific to a national comparison.

HOW TO PREPARE A STANDARDS ANALYSIS

A standards analysis can be easily computed using much of the information that has already been gathered or generated in other sections of the master plan. Identified below are the specific steps for completing a standards analysis.

Step 1. Identify all of the existing parks and recreation resources that the specific agency (for example, the city) sponsors or provides the community. This information is already available from the supply analysis. (See Appendix for worksheet.)

Step 2. Identify all of the existing parks and recreation resources that are available to community residents from all other sources in the community (county, state, federal, private, voluntary, university). This information is also present in the supply analysis material.

Step 3. Identify the total population of the community and also its population distribution. This information is available in the population analysis section of the master plan.

Step 4. Identify where each of the agency supplied resources are in the community (development of a map) and also identify where each of the nonagency supplied resources are in the community (again, a map is helpful). Then place the population distribution figures in relationship to the geographic region of the community as shown in Table 13.

Step 5. Obtain a copy of reliable parks and recreation standards. These standards can be obtained from:

- National Park Recreation Open Space Standards, National Recreation Park Association
- National Urban Institute Community Standards, National Urban Institute
- Agencies representing a specific resource. For example, National Golf Foundation (golf course standards), National Aquatic Association (swimming pool standards)

Caution: Standards may fluctuate greatly from the NRPA standards and a specialty agency's standards. For example, the NRPA standard recommends that there be one public 18-hole golf course for every 50,000 residents (within a 20-mile distance of the population center). However, the National Golf Foundation suggests one public 18-hole golf course for every 20,000 residents. Also the NRPA recommends one swimming pool for every 20,000 residents but the National Aquatic Association recommends one pool for every 10,000 residents. The difference is due primarily to the interest that the specific specialty organization has for that activity.

Step 6. Develop a chart (see Table 14) which indicates the amount of parks and recreation facilities that are supplied by the master plan agency compared with the national parks and recreation standard.

Also prepare a chart (see Table 15) that compares the total supply of parks and recreation resources to the national standards. The purpose of looking at both agency supplied and nonagency supplied comparisons is to present the most accurate picture of parks and recreation resources.

Table 13. Population Distribution in Relation to Geographic Region

Quadrant	Area	Population
9901	24-acre park 25-meter swimming pool	6,313
9902	1 tennis court 9.1-acre park 6.2-acre park ice rink	7,706

Table 14. Comparison of Agency Facilities with National Parks and Recreation Standards

Agency Supplied Item	Standard	%
273 acres of parkland	1 acre per 1000 population	100
15 tennis courts	1 per 2000 population	100
Outdoor swimming pool	1 per 20,000	0

Table 15. Comparison of Nonagency-sponsored Facilities with National Parks and Recreation Standards

Nonagency-sponsored Item	Standard	%
Private outdoor swimming pool	1 per 20,000 population	50
Country club swimming pool	1 per 20,000 population	50
Forest service park area (682 acres)	1 acre per 1000 population	325

For example, one community may not have a sufficient parks and recreation resource (for example, a golf course) but when analyzing what is made available by other groups (one county golf course and two private golf courses within a 20-mile radius) then it becomes clear that the community has sufficient golf course opportunities (from a standards viewpoint).

SUMMARY

One of the major contributions of a master plan is a national standards comparison. Standards are established by groups that represent different aspects of the parks and recreation field and have served as guidelines for many years. Comparing the community's parks and recreation resources to a standard that is based on population and distance provides significant information to community planners. Table 16 provides an example of a standards comparison.

Table 16. Standards Comparison of Parks and Recreation Resources

Item	City	%	Noncity	%	Total %
Parks	273 acres	100	47 acres (schools)	39	139
Tennis courts	15	100	16 (university)	110	210
Outdoor pool	—	0	2 (private)	100	100

7

Agency Action Plan

The agency action plan represents a major change in the master plan process. It is at this time that the information which has been gathered prior is utilized and placed into a directive format. The master plan consists of two major parts: data collection and data utilization. All sections prior to the agency action plan, expenditure analysis, and priority system are collection in nature. As was demonstrated by the master plan flow chart (see Figure 1, page 7), a major change occurs in the master plan process at this time.

WHAT IS AN AGENCY ACTION PLAN?

The agency action plan represents the use of the previously gathered data and findings so that a positive parks and recreation direction can emerge. The agency action plan identifies individual agency actions, responsibilities, and a suggested timeline. To better understand the definition, the following key components are highlighted:

1. **Previously gathered data.** Information has been gathered for the master plan about agency goals; determining what parks and recreation resources are available; identifying the population served by the resources; clarifying the demands, wants, and desires of the community residents; and comparing the available resources to the nationally accepted standards. It is this information that is utilized for recommendations for agency actions.
2. **Positive direction.** The master plan should be a document based on "facts and figures" and not on bias or assumptions. Therefore, if the recommendations are based on the master plan findings then the future direction of the community resources should be accurate for what is needed.
3. **Individual agency actions.** The action plan must identify what agencies are responsible for specific actions. It is less helpful to conclude that one additional park is necessary in a community, than to recommend that the City of _____ supply a 2.4-acre children's park in the southwest quadrant of the community.
4. **Timeline.** It is very helpful if the actions suggested are attached to a thought-out timeline so that recommendations are not lost to nonaction postures. The timeline should represent a very accurate estimate of "when" a specific action should take place.

PURPOSES OF AN AGENCY ACTION PLAN

The agency action plan has obvious benefits and purposes. Some of those purposes are identified below:

1. **Identifies specific actions.** The agency action plan is valuable in that very specific actions are suggested based upon the data which has been gathered from other sections of the master plan. The more specific the actions, the greater the likelihood that those actions will actually take place. Notice the difference between a specific action statement and a general action statement:

Action Necessary (General)

1. The City of _____ is in need of additional parkland to properly serve community residents.

Action Necessary (Specific)

1. The City of _____ must provide one 2.4-acre children's park in the southwest quadrant of the community.
2. The County of _____ must provide two 3.5-acre parks, one in the northwest quadrant of the community and one in the Hillside subdivision area.

2. **Identifies specific agency responsibility.** Another value of the agency action plan is that an agency is specifically identified as being responsible for a particular action. If a specific agency is not identified then the action is less likely to occur. (For example, the City of _____ should . . . , the private sector should . . .
3. **Interpretation of data.** The master plan must provide a statement of direction in addition to data collection. One of the major purposes of the agency action plan is to provide that data interpretation. However, a caution is suggested. Even though the data are "hard facts" the interpretation of the data can become very personal. The master plan writer must be cautious of personal bias as specific recommendations are suggested. For example:

Fact: The city states as a goal that it should be responsible for providing the leisure needs of the community.

Fact: The city provides one indoor municipal pool, the private sector provides one outdoor pool, and the local college provides one indoor pool.

Fact: The city's population is stable with a slight growth pattern upward in a geographically equal distribution.

Fact: The latest community survey indicates that the community residents desire a community outdoor swimming pool as their highest priority.

Fact: The standard recommends one pool for every 20,000 residents. The community has a population of 30,000.

Now, what different interpretations of the above facts can occur?

Conclusion 1: The community provides sufficient swimming opportunities for community residents (i.e. one pool for every 10,000 residents).

Conclusion 2: The city should provide one additional pool so that the city is providing the proper number of swimming opportunities for the community (i.e. one indoor pool plus one new pool, therefore, one pool for every 15,000 residents).

Conclusion 3: Considering other priorities, the one city supplied pool is sufficient. As the population increases to 40,000 a new pool would be recommended.

The interpretation of the facts or data is the responsibility of the master plan writer. In some instances the collected data will point very clearly to a specific conclusion. In other circumstances that data will allow for multiple interpretation.

4. **Suggested timeline.** One additional purpose of the agency action plan is a timeline recommendation. It is very helpful to apply a time element to the recommendations so that the relative importance, urgency, or lack of urgency can be pinpointed for the community decision makers.

PREPARING THE AGENCY ACTION PLAN

To prepare the agency action plan several steps need to be followed. However, individual interpretation and adjustments may alter the specific step sequence and the inclusion or exclusion of certain steps.

Step 1. Gather all previously prepared information from the other aspects of the master plan. Of specific help are the charts, graphs, and tables that have been prepared to make the data more understandable.

Step 2. Organize the data into some sort of master plan groupings such as planning districts, census tract zones, or subdivisions. (See Table 17.)

Table 17. Parks and Recreation Resources in Hillsdale Subdivision

Population—6,313	Service Zone—5 sq miles		Quadrant—9401-1	
Item	Sponsor	Amount	Standard	%
Parkland	City	2.4 acres	1 acre per	30
	Church group	1.2 acres	1000 population	10
	School district	3.1 acres		30
Tennis courts	City	4 courts	1/2000	120
	School	1 court	population	30
Outdoor pool	—	—	1/20,000	0
Softball field	City	1	1/1500	25

Step 3. Interpret the findings by comparing all the material gathered and come to a conclusion as to what the material means. Again, there is a very abstract process in which different interpretations may emerge. In some instances specific directions are very clear while others are nebulous.

Interpretation of Resources in Hillsdale Subdivision

1. Between city, school, and church sponsorship, 100 percent of the recommended parkland per population per distance is provided. The city supplies approximately 1/3 of the parkland in this area.
2. This subdivision is well-endowed with tennis courts. No increase is necessary.
3. This area does not have an outdoor pool available, however in conjunction with the adjoining city quadrant area, the pool standard is met.
4. One area of future development should be to add 3 softball fields. Perhaps the church organization could be approached about constructing 1 field while the city and school district could each provide another.

Step 4. Prepare an agency action form that details:
- The agency responsible for the action
- The specific action necessary
- The time frame that the action should occur within.

Tables 18–20 present three different approaches to setting-up the agency action form.

Table 18. Agency Action Form—by Agency

Agency	Action	Time Frame
City of _____ Parks and Recreation Department	1. Construct one 2.4-acre children's park in the southwest quadrant of the community.	1. Recommended completion date—Fall 1985
City of _____ Parks and Recreation Department	2. Construct one 18-hole public golf course in the northeast quadrant of the community.	2. Recommended completion date—Fall 1992
City of _____ Parks and Recreation Department	3. Expand the outdoor ice rink by 200 square feet.	3. Immediately
City of _____ Parks and Recreation Department	4. Construct a 25-meter outdoor swimming pool in the city center area.	4. As the city population reaches the 42,000 resident level (1987)

Table 19. Agency Action Form—by Actions

Agency: County	
Actions	Time Frame
1. To develop a comprehensive youth and adult swimming instruction program at the three indoor county pools.	1. Summer 1985
Agency: Private Sector	
Actions	Time Frame
1. Continue to provide to the community the outdoor swimming pool opportunity.	ongoing

Table 20. Agency Action Form—by Sector

Planning District No. 6		
Sector	Action	Time
Local government	No action recommended for planning district 6	Not applicable
County government	1. Development of a 2-acre campground on the south ridge quadrant of the district	1. 1987
Private sector	1. Recommended continued expenditures for recreation resources development in this district, specifically in _____	1. 1984–1987

Step 5. Do not formalize the agency action plans. At this point the actions should be lists of actions necessary with suggested timelines. Another section of the master plan will allow the writer to determine which actions should be of a higher priority than another. It is necessary to identify actions but it is not necessary to determine which actions should occur first, second, third, etc. The priority ranking system section of the master plan will identify a method of ranking these actions. Then a realignment of the actions can be performed.

SUMMARY

Data are analyzed and recommendations for suggestions are made in the agency action plan. This is the most abstract part of the master plan in that personal interpretation of the data occurs. It is important to base agency actions on the most accurate interpretation of the facts. Generally, the agency action form is detached from the master plan and is used as the primary planning document or summary sheet for community decision-makers.

8

Expenditure Analysis

A master plan is valuable because it points a direction for the community to take relative to parks and recreation. The expenditure analysis has value to community planners because it determines the costs of the recommended directives. If community decision-makers are actually expected to make decisions then they need total information including the costs of future development. Many community planners and decision-makers base their decisions primarily on the cost of the recommendation and secondarily on the need.

WHAT IS AN EXPENDITURE ANALYSIS?

An expenditure analysis is a financial cost estimate for each recommendation or suggested action of the master plan. If the master plan concludes that the number one priority and need of the community is a 25-meter outdoor swimming pool then the expenditure analysis would be an accurate estimate of the cost of that new pool. Additionally, the expenditure analysis usually estimates the change in cost of a specific recommendation over time. Table 21 is an example.

The estimated cost must be accurate and based upon as much available information as possible. In some instances, cost estimates will not be available because of the unique specifics of a recommendation. At other times, the master plan agency may have to contract with an organization or business just to receive a cost estimate, although other businesses will be happy to provide cost estimates. It may also be possible to receive estimates from the master plan sponsoring agency such as the city engineer's office.

An expenditure analysis should also include a detailed history of parks and recreation spending in the community. For example, the community population divided by the city parks and recreation budget will give a cost per resident figure. The expenditure analysis should include a comparison of money spent for parks and recreation to other communities that are similar in makeup so that the community decision-makers have relative data. Lastly, the expenditure analysis should present a method of funding the proposed cost recommendations such as increased taxes, bonding, user fees, etc. To summarize, an expenditure analysis consists of:

1. A history of parks and recreation spending in that community.
2. A comparison to "like" programs in other communities.

3. The cost per recommendation from the master plan.
4. Method-of-funding suggestions.

PURPOSES OF THE EXPENDITURE ANALYSIS

The expenditure analysis provides the master plan reader with very accurate information relative to the costs of a specific agency-recommended action. But the expenditure analysis has other purposes as well. Some of those purposes are to:

1. Offer a comparison to similar agencies. The expenditure analysis, if prepared properly, will show how much money is spent per resident for parks and recreation and that information can be compared to other communities that are similar in size and makeup to the master plan city.
2. Highlight a method of funding the proposed costs so that community decision-makers have some idea of where the needed money can come from.
3. Highlight the relative importance of the parks and recreation service. Communities may not realize how little or how much they spend for the "quality of life" aspects that the parks and recreation agency provides.

PREPARING AN EXPENDITURE ANALYSIS

The expenditure analysis is very significant to the master plan, particularly when the decision-makers ask the question, "How much will all of this cost?" To prepare an expenditure analysis the following steps can be followed:

Step 1. Prepare a history of spending chart. The community decision-makers will find it helpful to see how much money is currently being spent on parks and recreation in the community. Only estimates from other organizations are possible, but the master plan sponsoring agency can prepare a parks and recreation budget summary sheet that details what they are spending on parks and recreation. (See Table 22.)

Table 23 is an example of a percentage table, which may be developed if other organization information is available, while Table 24 details the cost

Table 21. Cost of an 18-Hole Golf Course for the City of _____ ($ millions)

1984	1985	1990	2000
1.3	1.42	1.84	2.9

Table 22. 1984–85 Parks and Recreation Department Budget Summary

	83–84	84–85
*Recreation and Culture**		
Total budget	$ 320,458	$ 342,046
Employee	$ 191,750	$ 201,338
$ 9,600 increase		(5% increase
$ 2,400 Rec. Center increase		+ $9,588)
$12,000		
*Recreation center (School district pays one-half)	$ 32,600	$ 35,000
Swimming Pool		
Total Budget	$ 160,170	$ 174,456
Employees	$ 91,000	$ 95,550
$ 9,736 increase		(5% increase + $4,550)
Parks and Parks Area		
Total budget	$ 314,500	$ 313,767
Employees	$ 168,400	$ 178,820
$ 9,153 decrease		(5% increase + $8,420) Includes a $2,000 request for temporary help.
*Willow Park Special Revenue**		
Total budget	$ 177,600	$ 183,798
Employees	$ 126,950	$ 133,298
$ 150 decrease		(5% increase + $6,348)
*Cache County pays one-half of Willow Park		
Cemetery		
Total budget	$ 92,000	$ 95,428
Employees	$ 76,550	$ 80,378
$ 400 decrease		(5% increase + $3,828)
Department Total		
Total budget	$ 1,064,728	$ 1,109,495
Employees	$ 654,650	$ 689,384
+ $12,003 increase		(5% increase $34,734)

Table 23. Criteria for Assigning Utah Outdoor Recreation Roles and Responsibilities

Ownership of Land and Recreation Resources in Utah by Administering Agency			Financial Ability to Respond to Local Needs by Agencies in Utah		
Agency	% of Resource Ownership in Utah	% of Recreation Site Ownership in Utah	Agency	% of 1967–1971 A & D Expenditures in Utah	% of 1971 O & M Expenditures
Federal	66.2	63	Federal	13	21
State	9.1	10	State	46	26
Local government	0.1	9	Local government	31	41
Private enterprise, civic and church	21.0	18	Private enterprise, civic	10	11
Indian tribes	3.9	0.1 or less	Indian tribes	0.1	1
TOTAL	100.0	100.0		100.0	100

Table 24. Cost Per Resident for Community Services

Service	Percent of Total Budget	Actual Dollars Spent
Parks/recreation*	17	1.81 million
Street	26	2.67 million
Police department	33	3.42 million
Fire department	21	2.22 million

*Parks and Recreation cost per resident = $6.42 per year.

per resident for parks and recreation and compares this to other community services.

Step 2. Prepare a comparison table to other like communities. This demonstrates to the community decision-makers how your community agency compares to agencies in other communities, in fulfilling similar tasks. (See Table 25.) Determining what communities are similar to the master plan city may be very difficult and specific to the community. Generally, similarities in population, city acreage, and total government expenditures are characteristics which can be used to make judgments.

Step 3. Prepare a cost per recommendation table. The most critical information that the expenditure analysis can provide is to identify the cost for each recommendation that the master plan suggests. To do this the following must occur:

- Prepare a table listing the recommendations from the Agency Action Plan and a suggested timeline for each one (Table 26).
- Consult with the appropriate agencies that would construct those facilities (city engineers, private construction companies, or specialty agencies such as the United States Tennis Association) and ask for an estimate as to cost for each of the years indicated. The inflation cost for construction varies per region of the country and over time but perhaps a 3 percent increase for next year, 5 percent for the next two years and an estimated 35 percent over the next 12 years would be

Table 25. Comparison of Expenditures and Development in Similar Communities (Dollars)

	Master Plan City	City B	City C	City D	City E
Total expenditures	1.81 million	1.3 million	1.92 million	2.46 million	2.59 million
Park development	62,000	118,000	65,000	72,000	1.2 million

Table 26. Timeline for Agency Action Plan Recommendations

Actions Needed	Suggested Time	Costs ($)		
		1985	1990	2000
1. One 2.4-acre park in southwest quadrant of the community.	1986	28,000	32,000	41,000
2. One tennis court in the Hillsdale subdivision.	1985	18,500	22,100	32,400
3. One swimming pool (25-meter) in the westside quadrant of the community.	1992	325,000	396,000	682,000

suggested. Then the appropriate cost estimates could be placed on the table. The purpose in presenting a cost over time is to answer the question, "But what if we wait?"

A caution is suggested. When a cost estimate from a local construction or engineering company is not available, contact a professional agency that represents that organized activity (Natural Golf Foundation, United States Tennis Association, etc.). Those agencies can suggest an estimated cost for your region of the country. However, realize that cost fluctuation will occur. It is also advisable to contact other parks and recreation agencies within your region to see if they have had any recent construction estimates.

Step 4. Prepare a method-of-funding list. Usually the community decision-makers will ask the question, "Where will we get the needed money?" A method-of-funding list is an attempt to identify appropriate ways in which the needed monies could be generated. Of course, the list is suggestive in nature and will be specific to a particular agency and community.

Method-of-Funding for Proposed Golf Course

The financing of the balance of the construction cost (not paid for by the $1.3 million bond monies) is $982,500 and could be facilitated by a combination of the following methods:

1. Seeking recaptured Federal Land and Water Conservation Funds administered through the state for 1983–84.
2. Seeking 50-50 matching grant from the Land and Water Conservation Board Fund through the state (application deadline October 1, 1984). This alternative is, by far, the most economical. Because the golf course property was purchased with federal assistance, the city has a good opportu-

nity to receive some development funding so as to complete the federally-funded project. Because of limited federal funds, the state would not be expected to match one-half of the entire cost of construction, but might be able to match the balance of $982,500 or a portion thereof.

3. Short-term borrowing from various trust funds within the city.

4. Residential development of the city's Southwest Street property. The city could be the subdivider of the 16-acre parcel and dedicate the profits to the golf course. Approximately sixty 8,000 square-foot lots could be developed. Cost of improvements per lot would average $2,500–3,500, netting a profit to the city of from $450,000–$390,000 for lots which could be sold for the bargain price of $10,000. Logan has previously assigned profits from the Parkland and River Park subdivisions for the development of adjacent parks. Most major golf courses in the state have been partly or wholly funded by the subdivision of adjacent properties so the precedent is established.

5. A revenue bond could be secured to pay the balance through revenues created by the golf course. Operation profits from the course after all expenses are paid would only be sufficient to retire a short term revenue bond for a small portion of the total construction cost.

6. Land sales for condominium development as outlined in all of the golf course studies could generate substantial revenue. Approximately five acres is available with a probable value exceeding $20,000 an acre.

Based upon the committee's findings, the most economical funding alternative is the matching grant from the Federal Land and Water Conservation Fund; next would be the revenues generated from land development adjacent to the golf course and along Southwest Street.

SUMMARY

The expenditure analysis is that section of the master plan which details the cost of the recommendations of the suggested actions. It also provides a history of expenditures, a comparison of expenditures, and a method of funding expenditures that is all very helpful for the community decision-makers. The primary task of the master plan writer is to contact reliable groups that can provide accurate estimates of the costs of proposed actions.

9

Priority-Criterion Ranking System

The master plan identifies many key areas: the goals of the organization, the supply of the resources, the population within which the services are provided, the demand that is placed on those supplies and identification of those resources yet desired, a comparison of supply to set standards, and then an analysis of all of these factors so that an action plan can be developed that sets recommendations and timelines, with a cost attached to the recommendation. There is only one aspect still needed—in what order should these actions take place? In other words, what is the most important recommendation, what is the least important recommendation, and what order do the other recommendations follow? One way to establish a priority order is the criterion ranking system.

WHAT IS THE CRITERION RANKING SYSTEM?

The criterion ranking system is a method of determining a specific order that each recommended action should take in the agency action plan. To more fully understand this definition, the key components are isolated below.

1. **Method.** When determining the priority of a recommended action it is necessary to have a method of assigning importance to an item that is bias-free and beyond the personal desires of community officials, special interest groups, or unrepresentative citizen input. One method of determining priority is a point system. However, the point system is very complex and may not be applicable to all master plans. It is developed later in this section.
2. **Specific order.** Generally, a master plan recommends the order of action that should occur from the most important or desirable to the least important or desirable. Likewise, the master plan may identify the order by indicating those actions that are primary, secondary, or terciary, or those actions that are immediate, intermediate, or long range.
3. **Agency action plan.** The priority system is directly linked to the agency action plan and when the plan is used as a summary sheet, the priority ranking system simply becomes the order of the recommended actions.

PURPOSES OF THE CRITERION RANKING SYSTEM

The criterion ranking system is primarily designed so that the master plan writer can recommend a specific order that the actions should take that is based upon some form of logic or relative importance. Other purposes of the system include:

1. Elimination of any bias as to what order the recommendation should take. A master plan may recommend the construction of an outdoor swimming pool and an 18-hole golf course. As soon as that information is public, special interest groups generally use that information for their own best interests. However, by placing an order of importance based on a criteria, the recommendations should then be in line with what is best for the community.
2. Equality of needed facilities, programs, and resources usually emerges because of a properly designed ranking system. In other words, each needed resource is equal in value to the community and judgment is not made on the basis of what is important and what is not important but on which is needed first, second, third, and so forth. A golf course is not more important than a swimming pool. It just may be needed by that community, at that time, more than the other facility.

PERFORMING A PRIORITY-CRITERION RANKING SYSTEM

There are two ways to prepare a ranking system. One is the point system and the other is the logic system. The differences between the two systems are highlighted in Table 27.

THE POINT SYSTEM

As Table 27 indicates, this system is the most bias-free and accurate, but it is also the most time-consuming and difficult to prepare. Likewise, it is not applicable to all master plans. Identified below are the point system steps.

Table 27. Comparison of the Point and Logic Ranking Systems

Point System	Logic System
1. Very difficult to prepare and develop.	1. Easy to prepare and generally easy to develop.
2. Very time-consuming.	2. Limited time investment.
3. Free from bias.	3. Susceptible to bias.
4. Not always usable in every master plan.	4. Usable in all master plans.
5. More accurate in nature.	5. Less accurate in nature.

Step 1. A criteria must first be established that indicates to the master plan writer on what basis decisions will be made. For example, one criterion system might be based on:

- current land use and condition;
- property tax value;
- land value.

Step 2. A description and point system is then applied to each of the criteria established.

- Current land use and conditions
  1. vacant — 5 points
  2. abandoned property, structures still existing — 4 points
  3. built up and lived in, structures run down — 3 points
  4. built up, good condition, structures old — 2 points
  5. built up, excellent condition, structures relatively new — 1 point
- Land value index
  1. convenience of accessibility by pedestrian — 1–5 points
  2. convenience of accessibility by automobile — 1–5 points
  3. convenience of accessibility of utilities — 1–5 points
  4. adaptability for expansion — 1–5 points
  5. incumbrance of existing facilities — 1–5 points

Step 3. Applying the points to the criteria factors. For example, if the master plan was recommending the purchase of land to build a park, this criteria system could be applied by assigning a certain number of points to the land site. Taking those points into consideration with other criteria, a decision could be made based on which land had the highest point value. Table 28 shows that land site A has the most points and therefore, has the highest rankings for property purchase.

Caution. The major difficulty with the point system is in establishing meaningful criteria and deciding if each criteria is of equal value. For example, other criteria might be:

1. lack of existing resource;
2. community desire for resource;
3. lack of meeting national standard.

Table 28. Application of Points to Criteria Factors

Land Site	Current Land Use	Land Value	Tax Value	Total
A	5	5	3	13
B	5	1	4	10
C	2	1	1	4
D	1	4	2	7

However, is the local desire for a parks and recreation resource of the same point value as not meeting the national standard for that resource? If they are the same value then the point system will work effectively. However, if the community decision-makers believe that citizen input is more valuable than national standards, it becomes extremely difficult to give a representative point value to each category. The point system may still work, however. It just requires the master plan writer to make decisions as to whether all criteria are equal, or if they are unequal, what is the relative value of each criteria factor.

THE LOGIC SYSTEM

The logic system is much more flexible in nature and uses the following steps illustrated in Tables 29–31.

Step 1. Identify the key factors (criteria) of the master plan.
Step 2. Fill in the key factors (criteria) with the available data from the master plan.
Step 3. Through logical deduction determine, by analyzing all of the information, what areas are in greater need than others.

Caution. The logic method leaves the master plan writer in the position of interpreting the gathered facts and making personal judgments based on his/her own logic.

Table 29. Master Plan Key Factors

Supply of Resources	Population Trend	Demand Factors	Standards Comparison

Table 30. Key Factors Data from Master Plan

Supply	Population	Demand	Standard
1. No outdoor swimming pool	26,844 residents with a moderate 5-year growth plan	ranked no. 1 by the 1983 community survey	1 pool for 20,000 residents 0% of standard
2. 15 Tennis courts	population is not evenly distributed over current tennis court sites.	ranked no. 6 by the 1983 community survey	1 court for every 2,000 residents 100% of standard
3. 289 acres of parkland	population evenly distributed over current parkland sites	ranked no. 15 by the 1983 community survey	1 acre per 1000 residents 100% of standard

Table 31. Priority of Need

Priority Need	Action
1	Build an outdoor swimming pool
2	As the population increases by 2,000 build one tennis court in the population area that needs the court
3	As population increases proportionate to the standard, build a new park in the population district that needs the park

THE RANKING CHART

Regardless of whether the point system or the logic system is used, a ranking chart must be developed so that the readers of the master plan understand which recommendations or actions are of a higher priority. The ranking chart would generally consist of the agency action plan and the expenditure analysis. Table 32 is one example of a ranking chart, but it may take any other form as long as the recommended action is clearly indicated by the rank order of need.

SUMMARY

The master plan needs a criterion ranking system so that the community decision-makers know in what order the actions should follow. A criterion is first established and either a point system or logic system is used to determine the specific order of the actions. Both systems have positives and negatives but a specific order of recommended actions can emerge. The importance of the priority cannot be overemphasized since it is usually those items ranked highest that receive attention and action.

Table 32. Ranking Chart

Priority	Action	Agency	Time	Cost ($)
1	Construction of an outdoor swimming pool	City Parks and Recreation Department	1–3 years	300,000–362,000
2	Construction of one tennis court in the Hillsdale subdivision	City Parks and Recreation Department	1 year	18,000

10

The Master Plan Document

The master plan represents months of diligent work and in many cases expenditure of community dollars. The master plan may be used as the primary planning document for much of what is accomplished in the parks and recreation domain for a 5–10 year period. If the master plan is to play a major role in community decision-making, the document itself must look professional and represent the quality that exists within it. There are a few simple rules that may be followed that can create a professional-looking document requiring limited skill and limited financial cost.

THE COVER

The cover of the master plan document sets the very first impression of the value of the document. It is well worth the time and cost to have a graphic artist design the cover for you. The graphic artist is professionally trained and has special equipment available that will make the cover most impressive. A graphic artist can be located at any university or college, private printing company or within your community agency.

The cover should identify the following:

1. The title of the document (for example, the City of Bainbridge Parks and Recreation Master Plan 1985–1995)
2. The sponsor of the document (for example, prepared by the City of Bainbridge Parks and Recreation Department)
3. An artistic cover design is always an excellent touch to the document (for example, children playing on park/playground equipment or the city seal)

THE BINDING

Depending on the length of the document, either a plastic spiral binding or a Velo binding is appropriate. The plastic spiral binding works well with documents that are 50 pages or more in length. It allows easy turning of pages, and keeps the document flat when in use. Velo binding is more usable with a smaller document but the back of the document must be cracked before it can be laid flat. Both bindings generally are inexpensive. If the

master plan is to be a working document, the plastic spiral binding is suggested.

THE COPY

The actual copy, or the type that will be read by the community decision-makers should be very critically researched. The following suggestions are helpful:

1. Use a word processor where possible. The word processor will allow corrections to be made with ease and the individual pages can be blocked for an effective look. Also, margins and pages can be justified.
2. Always prepare originals on good quality white paper. This allows the duplication process to be clean and avoids yielding a faded copy.
3. Illustrations and lettering should be as black as possible. Any solid areas (large black areas) should be filled in using ink.
4. Continuous tone photographs (snapshots or photographs varying from black to white with shades of gray) do not reproduce directly. If photographs are desired, it is best to have them prepared by a halftone (converting gray tones into dots) photography process and then printed using metal plates. The cost is usually high but photographs are recommended to make the document "more humanistic."
5. Original art (copy, graphs, charts) should be kept as clean as possible.
6. Do not put clear tape over any of the actual image particularly the shiny surface tape. It will create a dark spot over the image when duplications are made.
7. Leave at least a 3/8 inch margin at the top and bottom of the copy to allow for the gripping (the metal fingers that grip the paper to draw it through the duplication process).
8. Allow 1/2 inch more room in the left side margin to accomodate the binding. If the copy is to be printed on two sides, remember that the back side will have the 1/2 inch additional binding margin on the right side of the copy.
9. In some cases, certain material would best be suited if it were enlarged or reduced. Many photocopiers have this capability. Then the reduced or enlarged material can be pasted onto the appropriate section of the copy.

CHARTS, DIAGRAMS, FIGURES

It is helpful if the master plan document uses a variety of charts, diagrams, and figures to display the variety of researched material. It is recommended that the master plan writer make contact with someone who has a microcomputer and a variety of different graphics can be selected, from pie charts to line graphs. It is much simpler to use the microcomputer than to attempt to draw the graphs free hand. The graphs are also more accurate in proportion.

THE APPENDIX

If the master plan uses an abundance of raw data, that is, survey findings, engineering reports, etc., then this material should be placed in either a second volume to the master plan or in an appendix. The appendix can be referred to in the main body of the master plan but will not require the reader to spend time wading through the material if it is not of specific interest to the reader.

DUPLICATION

If the master plan is to be used it must be distributed to the appropriate community decision-makers. Therefore, a sufficient number of copies should be duplicated for distribution. The cost for each duplicate will depend on the length, the use of photographs, and the number printed. Bear in mind that the extent to which the master plan is distributed will to a large degree determine its usage. It is suggested that enough copies be made so that they can be distributed to key community figures, libraries, and governmental offices and used for reference.

INCREASING THE USE OF THE MASTER PLAN

There are several actions that can be taken in an attempt to increase the use of the master plan. The following are suggestions:

1. Develop a professional-looking document.
2. Provide press releases to newspapers and radio stations regarding the results of the master plan.
3. Conduct a series of special public hearings in the community to present the results.
4. Make presentations at professional meetings detailing the findings.
5. Present the finished document to all community decision-makers. Also include an introductory letter explaining the major ramifications.
6. Place copies of the master plan in libraries, government offices, and offices of community figures.
7. Promote the master plan as the primary planning document at presentations to community groups (Rotary Club, etc.).

SUMMARY

The master plan must look professional and sharp. The use of the word processor, microcomputer, and a graphic artist will improve the appearance of the master plan document. A critical concept is to make sure that the appearance of the master plan is not neglected in an effort to keep the cost down. The impression that the master plan leaves will be as much visual as it will be content.

SECTION II

PERT Master Plan Schedule

The startup phase of the master planning process engenders a sense of urgency and uncertainty among most professional parks and recreation administrators. At this initial point, the administrator is faced with a nearly overwhelming array of master planning tasks that must be undertaken and completed before the agency can concentrate upon its primary service delivery mission and systems within the community. All the master planning tasks seem to demand equal and immediate attention. If the administrator is to minimize uncertainty and loss of productivity, the tasks must be arranged in priority sequence and utilize a scheduling mechanism to coordinate time and manpower demands with the completion schedule of the total master planning process. PERT (Program Evaluation and Review Technique for the Master Plan Scheduling) is an information management tool created for the administrator with startup phase problems. It provides a method of focusing the administrator's attention upon: (1) latent problems that require decisions in the plan, and (2) the procedures and adjustments regarding time, resources, or performance that may improve the capability of completing the master plan process on the appropriate target dates.

WHAT IS PERT?

PERT is one of the important tools developed in recent years by modern information management systems to facilitate executive decision-making. It provides a logic chart or flow diagram which is descriptive of the master planning process and provides more details than the same material in narrative form. More importantly, it assists the administrator in identifying gaps or exceptions in the overall construction of the master plan process. Many managers desire to "manage by exception" and a PERT technique provides a simple, clear, and readily understandable description of the planning process. Thus, it provides a true means for identifying all exceptions that would require administrative attention. A PERT network produces a clear outline of all tasks and events that occur enroute to completing the master plan process.

In addition to being a convenient shorthand description of the process for the administrator, the PERT network is like a map. It is written in a pictorial communication medium allowing for an easily understood physical picture of the whole master planning process. The clarity of the PERT

network removes confusion and doubt about planning issues. All concerns are documented and given a timeline within the network so that a focus upon relationships, inclusion of significant events, and estimated times might receive appropriate attention. The PERT network indicates that the interrelatedness of tasks requires a great deal of attention. Actual schedules, events, and budgets are closely related and must be coordinated.

WHAT ARE PERT ELEMENTS?

1. An **event** is measured by the start and completion time of a given master planning task. An event includes significant keypoints or milestones so that a timetable can be developed for the process.
2. An **activity** is the actual performance of a series of tasks. An activity links two consecutive events into a PERT network. Activities represent time that is critical in the PERT network. Thus, activities are represented spatially regarding manpower, material, space, etc.
3. **Tasks** are specific types of work required to accomplish objectives for each of the activities within the PERT network.
4. **Successor events** are events within the PERT network that immediately follow another PERT event without any intervening events.
5. **Predecessor events** come immediately before another event without any other intervening events.
6. A **network** is a diagram showing the events and activities in a logical sequential order. Note that no new activity may begin until the event just prior to it has been completed.

Figure 1 is a diagram of a simple PERT network. Events have been numbered 1 through 4; activities are designated A through D. Events are typically represented by numbers and activities by letters. For example, Event 4 cannot take place until both Activities C and D have been completed. Activity D cannot be completed until Event 3 has been completed.

Each activity lies between two events. In the case of Activity B, Event 1 is the initiating event and Event 3 is the terminating event. An activity

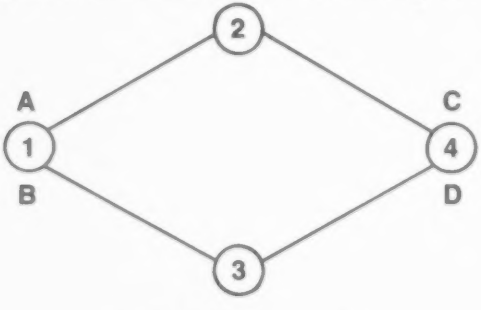

Fig. 1. A PERT Network

cannot be completed until its initiating event has taken place. An event is not considered as having taken place until all activities leading to the event have been accomplished.

The PERT network is effective in establishing and/or estimating performance time. After a PERT network has been firmly established and put on paper, it is necessary to obtain estimates on the performance time for each activity and/or event.

ESTIMATING PERFORMANCE TIME WITH PERT

Any parks and recreation administrator realizes that as a deadline approaches, more time is usually required for job completion. The request for additional weeks or the extension of a contract are typical requests at the deadline. PERT networking helps to avoid this predicament by assisting the administrator to foresee any possible time shortages and dealing with them on an exception basis. This forecasting or predicting of problems with the master planning process long before they actually occur allows the administrator to make adjustments before the scheduled target date arrives.

PERT network allows the administrator to secure three time estimates for each activity from professionals that are very familiar with that particular activity: optimistic time, most likely time, and pessimistic time. These estimates should be enumerated in hours, days, weeks, months, or years as appropriate. The estimates are then utilized in the PERT network to compute the overall time required to complete a project. Note that one time estimate is recommended for the master planning process. The administrator always has the right to revise the time estimate if there is a definite change in the scope of the original process. After establishing a PERT network that shows the interrelationships between the events and activities, the administrator obtains an estimate for each activity. This time estimate is compiled in a chart to estimate completion time.

AN EXAMPLE OF A PERT TIME PERFORMANCE ESTIMATE

After establishing a PERT network for the Master Plan Process Flow Chart (discussed in Section 1), the parks and recreation administrator has a physical picture or map of the entire master planning process that shows the interrelationship between events and activities. Figure 2 is an example of what might result. Note that all of the time performance estimates are in weeks. In this PERT network Event 6 is a successor and Event 3 is a predecessor of the activity connecting the two. This activity has an expected time for completion (Te) of three weeks. Using the above network as a guide, time estimates can be compiled into a table. (See Table 1.)

The next step in the completion of a PERT network is to establish the times you can expect to reach the events in the network. These expected times are represented by the symbol Te and appear above events on the PERT network (Figure 2). The Te of an event represents the earliest

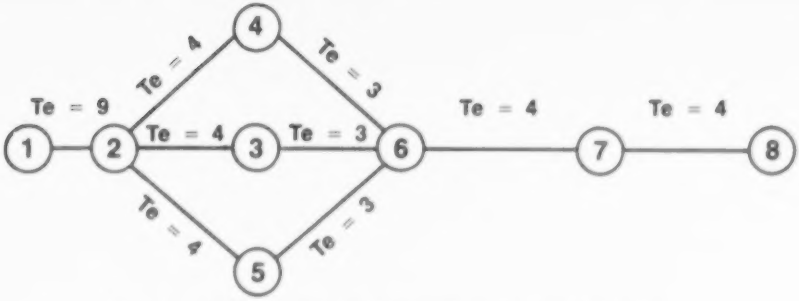

Fig. 2. Interrelationship between Events and Activities

possible time that the event can be reached. The Te is computed by adding the Te's of all activity paths leading to the event. By referring to the table, the parks and recreation administrator can anticipate a minimum of six months to complete the master planning process.

INTERPRETING A PERT NETWORK/SCHEDULE

The time required to reach Event 1 in the PERT network is zero time. No activity precedes the event and therefore no time can be consumed in reaching it. The Te for Event 1 is always zero. This event is the formal beginning of the master planning process. The activity that connects Event 1 with Event 2 has a Te of nine weeks. Therefore, the time we can expect to reach Event 2 is nine weeks after the startup phase of the master planning process.

The Activity that connects Event 2 with Event 3 is Population Analysis and has a Te of four weeks. The time required to reach the completion of Event 3 would be nine weeks plus four weeks or thirteen weeks. According to the PERT network all activities that are listed before Event 3 must be completed before Event 3 is complete.

The activity that culminates in Event 6 or Agency Action Plan would require four months or sixteen weeks. This timeline establishes that it would

Table 1. Time Performance in the PERT Network

Number	Events	Predecessor Events	Successor Events	Time Estimate (weeks)
1	Goals and Objectives	0	1	0
2	Supply Analysis	1	2	9
3	Population Analysis	2	3	4
4	Demand Analysis	2	4	4
5	Standards Analysis	2	5	4
6	Agency Action Plan	3,4,5	6	3
7	Expenditure Analysis	6	7	4
8	Action Plan	7	8	4

require thirteen weeks to complete Events 3, 4, and 5 and then an additional three weeks to accomplish Event 6. Note that Events 3, 4, and 5 would be completed concurrently as per the PERT network diagram that estimates the completion time (Figure 2). Note also that all activities must be complete before Event 6 can be reached. Since there are three paths leading to Event 6, the largest time-consuming path represents the earliest possible time you can expect to reach Event 6. Time can be calculated from the first event forward or can be computed from the last event as you work backward toward the first one. Both provide a reference point of the time required to complete an event in order to keep the entire master planning process on schedule.

FINDING THE PERT CRITICAL PATH

Finding the critical path with the assistance of the PERT network can be most helpful to the parks and recreation administrator. The critical path identifies the events in the master planning process that require the most time in order to move the master plan from initial event to final event. In other words, any event on the critical path that requires more time than scheduled will cause the final events to be delayed by the same amount of time. There are two schools of thought in managing the master plan process. The issue is whether to plan forward or backward. This issue remains open and depends on whether or not a fixed date for completion has been established by law, policy action, etc. If a fixed completion date has been set, then backdating or working backward is required. If no fixed completion date has been set, then working the PERT network from initial event to final event is a proper procedure.

It is very difficult to produce an orderly master planning process from disorder. The parks and recreation administrator can simplify his/her role in this task and get better results by following six simple rules. Utilization of these rules in the PERT networking of an agency master planning process will benefit the administrator in almost all cases.

BACKDATING OR SCHEDULING PERT BACKWARDS

1. Define the end objective precisely. What are the specific goals and objectives that must be achieved by the master plan process? A concise statement that is measurable is fundamental to completing the master plan.
2. Define all significant events that are precedent to the end objective. Do not start on any logic chain until this has been completed. The key point here is making sure that no elements are left out inadvertently.
3. Define all significant events that are precedent to the initial event in the PERT network. This is a continuation of the strategy being suggested in the second step. Again, the purpose is to make sure that nothing significant in the whole plan is being overlooked or left out.
4. Define all significant events that are precedent to each of the PERT

network events. Analyze each of them in order. If it is found that some event already shown is a precedent to the event under consideration, then interconnecting lines from the preceding to successor event must be drawn.

5. Continue to work backwards by considering one level at a time. Take care that all significant precedent events are identified and appropriate interconnecting lines are created to establish that relationship.
6. Make sure that all events except the beginning and ending ones have at least one connection at each end. Recheck for any important events that have been left out of the PERT network. Recheck to identify and draw appropriate interconnecting lines between events. Multiple interconnecting lines will be created among events in a typical PERT network. If an omitted event is discovered, you must find out where it fits into the PERT network and then add it to the master planning schedule. There is a tendency to overelaborate a PERT chart by including minor events which have little or no time implications for the master planning process. Discard irrelevant matters from the charting process. Minor events may be written down somewhere for reference and follow-up, but they should be kept out of the PERT network. Only those events with timeline significance should be included.

PROBLEMS WITH CONVENTIONAL METHODS OF PLAN SCHEDULING

Conventional methods of administering a broad-scale process such as the agency master plan have produced notable successes. These methods include orientation of key staff and volunteers through written instructions; audiovisual methods; and inservice training about process, problems, research, recommendations, and involving consultants after which a plan for action is formalized. Such a blueprint comprises organization, time and activity charts, job description manuals, monthly schedules for staff, and control decisions for professional consultants, as well as clerical procedures that are too technical for most of the staff to understand. Revisions are made in all of these items as per most recent past experiences. Even though these traditional methods contribute to success, they are often insufficient. Too often the master planning process grows bigger and more complex as society changes. Conventional planning and scheduling procedures do not create a sufficient sense of urgency with staff and community leaders to get the master plan completed on schedule.

Conventional methods are often shortsighted because they are reviewed too hastily. Busy professionals are becoming increasingly skilled at skimming over written words in a report. Procedures and schedules that are contained in a narrative report become too time-consuming to comprehend and are not clearly understood until it is too late. There is often a tendency toward self-determination in the master plan as well as delay on unimportant issues because of the lack of an action schedule network. In most cases, the walls are under construction before the foundation.

APPENDIX

Space Standard Analysis
Facility or Location: _____

Space Surveyed or Specific Features Within the Space	National Standard as Applied to the Situation Surveyed		Sq. Ft. or Number Existing	Percent of Standard Existing		Percent of Standard Needed	
	Now	Future		Now	Future	Now	Future

Amount or Number Needed to Meet Standard		Conclusions Space is:				Remarks
		Adequate		Inadequate		
Now	Future	Now	Future	Now	Future	

Master Plan Goals and Objectives Worksheet

Parks and Recreation Agency Goals and Objectives	Parks and Recreation Master Plan Goals and Objectives
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

"The most reliable way to anticipate the future is by understanding the present."

– John Naisbitt, *Megatrends*

To help the leisure services professional keep abreast of the latest issues and trends, the American Association for Leisure and Recreation produces the *Leisure Today* series. Originally appearing as single feature articles in the *Journal of Physical Education, Recreation and Dance*, the articles are periodically reviewed, the best of them being compiled into volumes of selected readings.

Now Available – Leisure Today: Selected Readings (Volume III)

This all new volume features reprints of over 50 articles by leaders in recreation and leisure, psychology and the social sciences, addressing the topics of:

- Population Dynamics
- Coping with Stress Through Leisure
- Antecedents and Consequences of Play Behavior
- Tourism
- Computer Applications
- Managing Leisure Services
- Leisure Programming for Selected Environments (Employee, Corrections, Campus)
- Evaluation of Leisure Programs
- Careers in Leisure and Recreation

Valuable for its timeliness, *Leisure Today: Selected Readings* (Volume III) is recommended as a textbook, or as supplemental reading for readings courses. Edited by Ron Mendell. 162 pp. 1984. Stock No. 0-88314-287-2

For price and order information call or write:
American Alliance Publication Sales Unit
1900 Association Dr., Reston, VA 22091 (703) 476-3481

AAHPERD

American Association for
Leisure and Recreation

American Alliance for
Health, Physical Education,
Recreation and Dance
1900 Association Drive
Reston, Virginia 22091

ISBN 0-88314-298-8